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> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

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VOL. XIII No. 4 WASHINGTON, D. C. JANUARY 28, 1929.

WISCONSIN COUNTIES TACKLE THE IDLE LAND PROBLEM

By W. N. Sparhawk, Washington

In 1927 nearly one quarter of the land in seventeen northern Wisconsin counties was sold for taxes. Only a small portion of it was considered a safe enough speculation for private individuals to buy the tax sale certificates, and most of it was left in the hands of the counties. Tax delinquency has developed rapidly since 1920, and as a result many towns and counties are in serious financial straits.

What is said to be the first definite effort of the northern counties to help themselves was the conference held at Rhinelander on December 14-15, attended by official representatives of 16 counties. The conference discussed various angles of the delinquent land problem, and made several definite recommendations. It was brought out that only 6 counties have been consistently taking tax deeds to the delinquent lands, as provided by law for lands delinquent three years or more. Most of the others intend to do so from now on. The necessity was emphasized of reducing taxes on poor land to a point where private owners will continue to pay.

The Legislature was requested to amend existing law so that counties can get clear title under tax deed in less time than the 6 or more years now required, and to change the forest tax law so that counties can list their land without paying the 10 cents an acre tax that is required of private owners. The State would pay 10 cents an acre annually to the towns, just as it does for private lands listed under the law. Several counties stated that the 10 cents paid by private owners brings in more actual cash to the towns than they collected under the regular property tax. The Legislature was also asked to make forestry more attractive to private owners by reducing the tax from 10 cents to 5 cents an acre. Legislation was also recommended that would enable counties, without seriously affecting private property rights, to zone land for forestry and to discourage attempts at agricultural settlement within such zones. It was recommended that counties sell tax lands within areas zoned as agricultural, and hold lands within forest zones for county forests.

One county has definitely decided to establish county forests, and several others are considering the matter. It is reported that another county has carried the zoning idea so far as to move isolated settlers out of certain nonagricultural zones, by inducing them to exchange their lands for county-owned lands closer to established communities.

BUBBLES

By John H. Hatton, D. 2.

There is something cheery and wholesome in the Ranger's thought for his favorite horse or faithful dog out there on the Ranger District. They have become almost indispensable to him, because for long periods while the wife and children are perhaps absent in some town or city so that the children may have school advantages, these faithful friends are his principal companions.

I became acquainted with Bubbles while spending three 10-hour days plus six and a half hours more with the Supervisor and Ranger on one of those new work analysis and administrative plans which recently infected some of the Washington officials and quickly spread like a contagion to every nook and corner of the Service. In passing, let me add that the disease infected me too and I have not looked for any antidote. It is one of those maladies that does us all good.

But at times when we were lost in a maze of days and hours of job and travel time, and we had the Ranger on the return trip to his station after ten to fifteen days of job to job travel and progressive riding, and there were not enough hours left in the month to get him all the way back home, Bubbles, with her beseeching brown eyes and little brown nose and her fluffy white coat, would come snuffing and wagging her tail as much as to say: "Don't take this thing so seriously; all work and no play makes Jack a dull boy." And if this was not enough to break our focus on that hour of scaling or marking or woods supervision time, she would go out and bring in her little tin plate and thereby tell us as plainly as any words that it was time for the eggs and bacon. The Ranger would rise and replenish the fire, the Supervisor would assemble those precious sheets and perhaps remark that we were an hour ahead of schedule; the visiting officer would make sure that range management had not been overlooked, and we would be ready for Bubbles's invitation to dine. She seemed to know just when work should stop and play begin and when play should stop. She knew her place exactly. Who couldn't love a little friend like that?

One evening as we had finished the supper dishes and the Supervisor was emptying the garbage into the standard receptacle, I heard a wild cry: "Bubbles is poisoned! Hurry! Melt a lot of lard and come quick!!!!!" The Ranger came running from his milking; feverishly I quickened the fire and melted a skillet of lard, each minute like an age, and we did all we knew for the little sufferer, now in the spasms of strychnine poisoning. Her eyes were becoming glazed. Fresh warm milk was forced down her throat between the spasms, and a great cup of melted lard. Her eyes seemed to brighten a moment and her little tail feebly wagged in friendly gratitude. Her body stiffened. We carried her to a warm place and I think each one of us inwardly prayed that life might yet be spared.

Bed time came. Only the Supervisor had the courage to go out and see out little patient. We looked into his face intently when he returned, hoping against but fearing the worst.

"Bubbles will live", he said. "She got up to greet me and let me tuck her away in her bed again." And with the morning she was again about us as cheerful and friendly as her weakened condition would permit.

"Tibo, you couldn't part with Bubbles could you?"

"I should say I couldn't!"

TIME MAKES WONDROUS CHANGES

By L. F. Kneipp, Washington

It is only twenty years since Senator Heyburn was at his best in his opposition to the extension of federal control over the forest resources of the State of Idaho. Since then the inexorable trend of economic and political logic has worked considerable change in both official and unofficial viewpoint. One of the most recent and most interesting manifestations of this change is presented by the message submitted by Governor Baldridge of Idaho to the Legislature of that State under date of January 8, 1929, which contains the following significant paragraphs:

"Consideration should be given to the proper protection of cut-over and burned over lands by making such changes in our revenue laws as are necessary and advantageous encouraging owners to protect properly their cut-over lands. The cost of conservation and reforestation tending to perpetuate our forests is of material concern and will require the cooperative effort of private, State, and governmental agencies. The State of Idaho is already doing a large share of this work furnishing protection to some 817,000 acres of State-owned forest land, which appears to be all the State is able to care for.

"Inasmuch as it appears that the Federal Government is better prepared to carry on a policy of reforestation and for the further reason that many years must elapse before another crop is grown on these lands, I believe that the United States Forestry Service should be encouraged to take over either through exchange or purchase, such lands as are most suited to reforestation and water conservation through such congressional legislation as will best accomplish the purpose."

FIGHTING FIRE WITH MACHINERY AT NIGHT

By F. H. Brundage, D.6

The value of tractor-drawn Killefer plows for making fire line quickly and cheaply was demonstrated on a September fire occurring in a yellow pine stand, in the Snow Mountain District of the Ochoco, according to a story in the "Ochoconian".

This fire started about 10:30 a.m. and three men were sent to it. Between 1:00 and 2:00 o'clock it became evident that more help was needed and a road crew was sent in with a 2-T. Holt and Killefer plow loaded on a Federal truck. The equipment was put in action on the fire between 10:00 and 11:00 o'clock that night and by daylight about five miles of good line had been made and the most dangerous sections backfired. A fresh crew then took the equipment and strengthened the line wherever necessary. By evening the line had been made practically safe and none of it was lost. The final area of the fire was 250 acres. About 20 men were employed.

The Ochoco men believe the tractor and plow are worth from 50 to 100 men on a fire in this region. The Supervisor says that if this equipment had not been available the fire would undoubtedly have covered a much larger area, as it would have taken an extra day to get additional men from Prineville and Burns and, the humidity being low, this delay would probably have been disastrous.

The action on this fire also shows what can be done at night under favorable conditions. The equipment was put into use as soon as it arrived and a trench was plowed entirely around the fire before daylight. This made it possible to strengthen the line before the heat of the day and by evening the battle was over.

All of the eastern Oregon Forests and one Forest in eastern Washington have been furnished with Killefer plows to be used on fires in connection with tractors and trucks already available for road projects. To make night work possible, one or more 2-T tractors on each of these Forests have been provided with acetylene lights. The work done on the Ochoco fire is a good example of the practicability of this equipment where topography and cover permit its use. This equipment has been successfully used in yellow pine, lodgepole, and similar timber types.

SELECTIVE LOGGING IN MINNESOTA

By Crosby A. Hoar, D. 2

In the September issue of American Forests and Forest Life, Mr. Kinney describes briefly the selective logging which is being done on the Menominee Indian Reservation. The writer was privileged to discuss that logging with Forester Grapp last summer and to visit one of the cutting areas. The Menominee Reservation is located in northeastern Wisconsin in a region favorable for the growth of white pine, hemlock, and mixed hardwoods; the latter including chiefly maple, basswood, and yellow birch. Many years ago, the Forest Service had some advisory connection with timber sales on the reservation but this connection was relinquished and, for some time, the cutting approximated a clear cut followed by rather destructive slash disposal. Perhaps conditions were such that nothing else could be done, especially in view of the fact that part of the reservation was agricultural soil suitable for allotment to individual Indians. At any rate, it was a pleasure to learn from Forester Grapp that selective cutting has been under way for several years and is now well established.

The selective cutting began in the winter of 1924-1925, when 35 acres were cut in that manner. In the winter of 1925-1926, 80 acres were cut selectively, in 1926-1927 370 acres, and in 1927-1928 700 acres. The total area cut over each year has run from one to two sections, but apparently selective cutting is so firmly established that it will be used for all or nearly all of the annual cut from now on.

In 1926-1927, the selective cutting took 14,300 bd. ft. to the acre and left 5,500 bd. ft. The advanced second growth runs strongly to maple and basswood. Mr. Grapp tries to take out as much hemlock as possible from the mixed stands, but where hemlock is the predominant tree he cuts lightly. In other words, he intends to favor hardwoods over hemlock in general, but where hardwoods are scarce he is not willing to open up the stand too much by cutting hemlock heavily. All timber is marked for cutting and an interesting feature of the marking is that the upper blaze is placed at the point where the marker expects the cutters to saw. The stump height is regulated in that way instead of by an arbitrary rule. (Incidentally the same practice is used by the Goodman Lumber Company with the further provision that the blaze is placed opposite the intended undercut, thus indicating the direction in which the tree is to be thrown).

Mr. Grapp finds that the cost of his logs loaded on cars in the woods has not been materially increased by the selective logging. The cost of railroad spurs is somewhat higher because of the larger mileage required to produce the desired quantity of logs. Cutting is on a 35 year rotation.

There is no slash disposal in the usual sense but the brush is reduced by cutting out and shipping all of the top and limb wood down to about four inches in diameter. This is done under contract, the present contract calling for 10,000 cords to be taken from the woods by the operator and delivered to the manager of the Indian reservation at a stated price. The wood is then sold green to a dealer who sorts it himself and re-sells it for various purposes, such as chemical wood, fire wood, etc. This operation just about pays for itself and results in a minimum of slash which, in most cases, is small enough and scattered evenly enough not to present a serious fire menace. One of the cutting areas was visited and found to be in excellent shape. Any forester who has an opportunity to visit the reservation would be interested in inspecting the selective logging and in discussing its details with Manager Hammer and Forester Grapp.

THE USE OF THE NATIONAL FORESTS FOR RECREATION

By M. M. Cheney, D. 3

The recreational use of the National Forests while one of the newest forest activities to be recognized, is one of the oldest forms of actual use. From the standpoint of the Forest Service, it has three outstanding angles. The first is that of public service, for the pleasure and health of the people; the second, a form of public relations in reaching out and making friendships for the Service on which it can rely for support in its other activities; and the third is the economic or financial, as a source of income, it being well established that for a given area recreation use pays more in fees than any other form.

Like grazing, recreational use was not recognized as one of the purposes for setting aside the National Forests, but has found its sanction in later legislation. By correlation, this use of timbered mountain lands fits in with other forest activities, many times the same area serving to produce crops of timber, to grow forage for stock, and to be used for camping, hunting, fishing, and the like. Limited areas are sometimes set aside for summer homes, resorts, or improved camp grounds, where it is necessary to exclude other forms of use to a large degree after it has been decided that for these relatively small tracts, recreation is the most productive use.

Recreational plans take into consideration the available sites, the ways of travel, locate the camp grounds, the summer home areas, the hotels, and other types of resorts, filling stations, and other forms of service sites, all fitted into a general balanced scheme, with a view to the rendering of the best public service and correlating these uses with forest management, grazing management, etc.

It is not likely, with the distance from big cities, that the Forests of New Mexico and Arizona will ever be subjected to the demand that is imposed on the Angeles and San Bernardino in California, for instance, but the past five years have seen a decided inflow of visitors from other States and, with better roads and more automobiles, the people of our own States are more and more spending their week-ends and holidays in the Forests. Such beauty spots as the lakes on the Coconino, fishing streams in the White Mountains and Blue Range on the Apache, the mountain camps on the Sandias, the timbered valleys of the Santa Fe and Lincoln are showing rapid development, while every Forest in the district is gradually taking on recreational functions.

From a personnel point of view, it has been pretty well worked out that Forest Service men are adaptable to this activity. Specialists are not needed, except here and there for the rounding out of plans, and Forest officers, even though jealous of the invasion of forest solitude and privacy and disliking some of the characteristics of the average tourist are fitting themselves into this form of public service and are educating the public to a widespread understanding that the Forests are open to visitors for camping, picnicking, hunting, fishing, and the like and for the construction of summer homes, but that the tourist must learn and must practice the woodsman's care with fire and the same class of neatness and cleanliness in the woods that is expected at home. The Forest Ranger who locates a summer home, or assists a visiting camper to better enjoy the forest pleasures and to protect the forest from fire and their clutter and filth, is serving the nation and is making friends for the Forest Service. If all this is done courteously and in a friendly way, it has been found and will be found to be of immense value in securing support for forestry program, forestry extension and protection and that all is bound up in forestry ideals. - Clipped from "Forestry News" of N. J. Dept. Cons. and Dev.

YE EDITOR DISCOVERS

The general leave bill drawn by the Interdepartmental Board on Simplified Office Procedure is tied up in the Budget Bureau and will not be introduced in this session of Congress. Owing to the agitation for revisions of the Welch bill it has been deemed inadvisable to present the leave measure, which will probably go forward in the 71st Congress. The three main features of the bill are:

To extend the 30 days annual leave to the field.

To put sick leave on a 15 day basis in the field and in Washington, except the first year which would be on a 30 day basis; to allow unused sick leave to accumulate from year to year not to exceed 120 days; to exclude Sundays and holidays in computing sick leave.

To make annual leave cumulative to 120 days from year to year for employees stationed in Alaska or the insular possessions. In this connection, Senator Hayden introduced an amendment to the Agricultural appropriation bill a few days ago, designed to extend the cumulative leave privilege enjoyed by the Extension Service to all bureaus of the Department operating in Alaska. This would make it possible for Forest officers in Alaska to take four years' annual leave (120 days) at one time. Senator Brookhart also introduced an amendment to the appropriation bill on January 7 aimed to extend 30 days annual and 30 days sick leave to field members of the Department employed in the continental United States.

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Mrs. Katherine B. Tippetts, Chairman of Conservation of Natural Resources of the General Federation of Women's Clubs, has written to the State Chairmen of the Federation asking that they

"Study the McSweeney-McNary Act and ask every Club in your State to keep informed as to its accomplishments and needs. This Act recognizes the importance of economic development by means of the research mentioned, but it carries no appropriation for the work. In order to make the Act effective Congress must provide funds. A letter has been written, signed by Mrs. Sippel (President of the Federation) as well as myself, to General H. M. Lord, Director, asking that funds for this research work be placed in the next Budget."

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To let the public know that the Forest Ranger's job is not merely an opportunity for an outing in the woods with pay, or a chance to duplicate the career of a two-gun man of the Great Open Spaces as depicted in the western film, PR has issued a press release telling what a man-sized job that of the Forest Ranger really is. It is hoped that this will help to discourage some of the 14 or 15 thousand letters - an average of between 40 and 50 a day - that the Service receives each year from persons seeking employment.

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A conference between various Bureaus in the Department who are doing silvical research was held in the Atlantic Building on January 16. Dr. E. P. Meinecke, Consulting

Pathologist D-5, who last summer visited all forest schools and forest experiment stations in France, Germany, Spain, and England gave a very interesting talk on his trip. He mentioned the large amount of research carried on by administrative men in Europe and said that he was greatly impressed with the minute knowledge of their forests had by these men - in fact they know almost every tree. In Germany as a matter of close land utilization, local nurseries occupy road rights-of-way. In Spain Dr. Meinecke found one locality where growth of Monterey pine exceeded anything he had seen anywhere. In Great Britain a hybrid larch (Japanese larch and European larch) was found to grow at a greater rate than either of its parents and appeared to be immune from the larch canker.

Dr. Meinecke said that while there is very little market at the present time for beech in Europe, it is still used as a nurse tree and for its beneficial influence on the soil. Extreme ecological changes have come about in Saxony due to planting of spruce in pure stands. The present soil fauna and flora, the ground cover and even the animal life to some extent are different than that originally present. A strong tendency exists now to convert to the mixed forest.

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Horace M. Albright is now Director of the National Park Service. He succeeds Stephen T. Mather whose resignation has been accepted by the Secretary of the Interior. Mr. Mather is resigning because of poor health, having been seriously ill for several months.

Mr. Albright prior to his appointment as Director was Superintendent of the Yellowstone National Park and Field Assistant Director of the National Park Service. He has been with the Department of the Interior since 1913.

NEW MEXICO A CONSERVATIONIST IN BUILDING BRIDGES OF CREOSOTED WOOD

It costs but 40 per cent as much, including installation, to keep a stream or wash bridged with creosoted, as with untreated wood, according to the New Mexico Highway Commission. And in adopting treated timber they have the example of the Santa Fe Railway, which has used creosoted wood long enough to anticipate 40 years' service, and thus such a bridge constitutes what they term a "permanent installation". Three types are used, (1) the all-wood bridge, and (2) the bridge with concrete piers and abutments and wood stringers, floor and railings, in both of which the floor is covered with gravel or asphalt to prevent springing of individual pieces; and, where travel is heavy is "laminated" construction, i. e. 2x4s or 2x6s placed on edge. (3) The compound concrete floor on wood substructure, of which the first for New Mexico, although standard in Colorado since 1925, is the type of the new Barelas bridge across the Rio Grande at Albuquerque, which probably carries more traffic than any other in the State. It has concrete floor laid on steel stringers with ornamental concrete railings, with creosoted wood piling, braces, and caps, 7 piles to a bent, and 62 twenty five foot spans. The 60-foot piles are driven to "refusal", and the uncertainty of solid footing is one reason for choosing wood in place of the more expensive concrete, which, also can not be sawed off at the exact point desired. Moreover, it was the experience with the driven concrete piles beneath the piers of the old bridge that the shifting sand "scoured" away from the two piles leaving them without adequate support to bear the dead weight of the very heavy concrete piers, and scouring does not similarly impair solid footing of the more numerous deeper-driven piles. The wood, dense southern pine, framed before treatment, is impregnated with 12 pounds to the cubic foot of creosote.

The following advertisement appeared in the DENVER NEWS

December 19, 1928

Buy TAGGED Christmas Trees

Trees that are tagged, either with the Red Tag of the U. S. Forest Service or the Yellow Tag of the Colorado State Forester

are guaranteed to you to be cut according to good forestry practice and with regard to maintaining and improving the beauty and usefulness of the Denver mountain area.

INSIST ON TAGGED TREES

CO-OPERATING IN THIS RECOMMENDATION:

Mountain Park Dept.. City of Denver
Denver Chamber of Commerce
Colorado State Forester
U. S. Forest Service
Denver Mountain Parks Protective Assn.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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> James Wilson, Secretary of Agriculture
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Vol. XIII No. 5 Washington, D. C. February 4, 1929

IMPORTANT FORESTRY PROGRAM ANNOUNCED BY SECRETARY JARDINE

The reopening of the whole forestry problem for a fresh attack on the basic, underlying causes of forest destruction is foreshadowed in a recent letter of Secretary Jardine to the National Lumber Manufacturers Association. The specific occasion of the letter was a resolution recently adopted by the Board of Directors of that Association requesting that forest products be included in suggested legislation for the control of overproduction of oil and coal.

While recognizing the importance of the problem raised by the Association, the Secretary points out that overproduction is only one symptom of the underlying disease of destructive forest exploitation, and that overproduction can be successfully treated only through a broad attack on the whole problem of destructive exploitation.

As a means to this end, the Secretary proposes the creation by the Government of a broadly representative commission to formulate a more far-reaching forestry program, including assistance in stabilizing the forest industries; completion of the nation's fire protection program; a large extension of Federal and State ownership; making public forests fully productive through complete protection, more intensive management, and adequate planting; aggressive cooperation to abolish destructive forest practices; and investigation of the importance and feasibility of public measures to prevent destructive forest exploitation.

The resolution and the letter follow:

THE RESOLUTION

WHEREAS, the public press reports that the oil and coal industries through their respective representative organizations, are calling attention to the public interest in the basic commodities on which their respective industries are built, and are seeking legislation from the Federal and State Governments, permitting control of production; and,

WHEREAS, we recognize the reason for permission for controlled production of the products of these industries, because of the public interest arising from the fact that neither oil nor coal, when once removed, can be replaced; and,

WHEREAS, the lumber industry, dealing also with a natural product, has an even greater reason for legislation of this character because,

First, the United States government is the largest individual owner of standing timber;

Second, wasteful overproduction and consequent low prices of standing timber reduce the return which the Government can obtain from its standing timber;

Third, unlike coal and oil, standing timber can be replaced, but such replacement, commonly referred to as reforestation, can be accomplished only through the leadership, cooperation, and action of the Federal Government and the cooperation and action of State Governments;

Fourth, because the American people are entitled at this time to an assurance of a perpetual supply of wood for the uses to which it is best suited and to which the country has grown accustomed;

Fifth, it is possible for Government and State leadership and cooperation to bring about such perpetual production;

THEREFORE, BE IT

RESOLVED: First, that the National Lumber Manufacturers Association recognizes the merit in the request of the oil and coal industries for legal permission and assistance in bringing about controlled production of their respective industries;

BE IT FURTHER

RESOLVED: That because every reason which exists for controlled production as to oil and coal exists, also, as to lumber and, in addition, many other reasons exist, that any legislation enacted to permit controlled production, under proper safeguards, of either oil or coal, or both, should also permit controlled production of lumber.

RESOLVED, that copies of this resolution be sent to the President of the United States, the President-Elect, the heads of the departments of the United States Government and to each member and member-elect of the Seventy-first Congress.

THE LETTER

Dear Dr. Compton:

I am greatly interested in the resolution of the Board of Directors of the National Lumber Manufacturers Association recommending legislation to control the production of lumber, enclosed with your letter of January 3.

I realize fully the difficulties confronting the lumber industry in its effort to liquidate capital investments in standing timber. I appreciate that an unstable market is in the long run beneficial neither to the consumer nor to the producer of lumber. Orderly production is essential not only to the financial welfare of the lumber industry itself but to the solution of the forest problem as a whole and the economic welfare of the Nation. For these reasons the problem should not only be dealt with but dealt with constructively.

It must be realized, however, that overproduction is only one of many symptoms growing out of the greater evil of overexploitation of the forests. The difficulties arising from an excess of manufactured forest products carried over from one period to another might be readily and easily overcome were it not for the more serious fact of overexploitation of our forests. The actual lumber surplus, while of great influence on market prices, is of little consequence to the conservation of our remaining timber supply compared with the immense quantities of low grade material sacrificed in a general effort for early liquidation.

In a recent public statement I took occasion to point out the close connection between unregulated production and forest destruction in the following terms:

> "This widespread forest destruction is the natural result of the fundamental economic error committed when our Nation permitted most of its public forests to pass into private ownership. Originally transferred for a nominal consideration, such

forests have passed into the hands of their present owners under conditions which often represent large capital investments and entail heavy carrying charges. This capital burden has caused a tendency to liquidate, and rapid liquidation has been accompanied by wasteful and destructive methods of cutting. All considerations for future forest growth on the land have usually been sacrificed to secure immediate or larger profits.

"Our national forest system with its reservoirs of conservatively managed stumpage has been a stabilizing factor, but not sufficient to control the situation. Had the Government acted earlier and in a larger way our forests could have been harvested methodically and without waste or destruction. It is too late to bewail this great mistake; but it is not too late to remedy some of its worst consequences."

Whether we apply the name "overproduction" or "overexploitation" to the problem you raise is relatively unimportant so long as we do not mistake the symptom for the malady and prescribe for the former rather than the latter. Obviously the real trouble has been unwise or badly ordered timber production. As a whole, our people have not consumed too much lumber nor have they on the average purchased it at too low prices. A mere restriction of the quantity of output, while it might raise the price to the consumer and remove a part of the producer's financial troubles, would not automatically or actually eliminate overexploitation, and without controlling safeguards would do little to decrease the drain on our Nation's forest capital.

You are of course not unmindful of the fact that public opinion cannot be expected to support a plan for the control of lumber production unless it is made clear that the beneficial results will be general and lasting. Obviously the plan must go farther than the mere restriction of output with higher prices for lumber. Controlled production can be justified as a desirable public policy only if in the long run it means either lumber at a lower cost per thousand feet or a more permanent supply, in addition to any special advantages accruing to the industry itself, desirable though this may be.

This Department has long been interested in the orderly utilization of forest products and in the prevention of their waste, and in the welfare of the forest industries as a vitally essential agency in the movement for forest perpetuation. More than a decade ago, the Forest Service undertook a comprehensive study on production and marketing problems of the lumber industry, culminating in W. B. Greeley's publication "Some Public and Economic Aspects of the Lumber Industry." Through the Forest Products Laboratory comprehensive studies are now being carried on in logging waste, especially in the Pacific Northwest, - a form of waste which is directly associated with premature liquidation. The proposed program of forest economic research under the McSweeney-McNary Research Bill would likewise deal with many phases of the forest problem as related to the lumber industry and its special problems of marketing.

The resolution of your Board of Directors states that control of production would increase the prices obtained by the Government for timber sold from the National Forests, and cites this as an important justification for such control. You will recognize, however, that the financial return to the Government for timber sold to its own citizens is not one of the major incentives to National Forest management. Sales of National Forest timber are not made solely or primarily to produce revenue. Other objects than the merchandizing of the timber, such as sustaining existing industries or communities, or supplying a dependent wood-consuming industry - a mine, for example, - is more important than the money return. This is indicated by the refusal of the Department to crowd National Forest timber on the market, with the result that the total timber output from the National Forests, including timbers used in round, split, or hewed forms, amounts to less than three per cent of the country's annual cut of lumber. Eventually, as the timber is needed, the annual cut from the National Forests will be five or six times as large as at present, and will be maintained at that level in perpetuity.

The resolution passed by your Board of Directors draws attention to suggested legislation for the control of the production of coal and oil. The parallel is an interesting one, and in my opinion the reasons for preventing the waste of timber are as forceful as those for preventing the waste of coal or oil. The proposed legislation to prevent the overproduction of oil grew out of investigations of the Federal Oil Conservation Board appointed by the President as a means of protecting the public interest against the waste of oil. Likewise public assistance by legislation or otherwise to control production of lumber would have its justification in the protection of the public interest by preventing the waste of forest resources. There is a distinction between the two problems in that oil is a "wasting" resource, whereas timber would be perpetually renewable if our forests were properly handled. Consequently, while the public has a large interest in using the present supply of timber without waste, it has a much larger interest in abolishing a more serious and in the long run a more costly type of waste, namely, that caused by the devastation or deterioration of extensive forest areas by destructive methods of exploitation, which brings about the waste of the potential growing power of our forest land. The waste of low grade timber and the other wastes connected with timber manufacture and utilization are no more real than the waste resulting from operations that leave land unproductive. This waste of our basic forest resource is intimately associated with unregulated production. Any legislation or other public assistance to control the production of lumber to avoid waste of usable material should be coupled with plans and undertakings by the public and by forest owners to keep forest land productive and secure from destructive practices.

It is important that the public cooperate fully with timberland owners in removing the difficulties and obstacles in the way of a large program of private forestry, - such obstacles as congested markets, the risk of repeated taxation on a growing crop, inadequate protection against fire, etc. Promising progress has been made in the cooperative program of forest fire protection by the Federal Government, the States, and many private forest owners, and this Department is now conducting an exhaustive investigation of the forest taxation problem throughout the United States. But the mere removal of such obstacles will not of itself assure the abolition of destructive forest practices. This objective can be brought about only by a concerted and aggressive program by the public and by forest owners for the adoption of better methods of handling private timberlands. It is true that an adequate program of reforestation requires the leadership, cooperation, and action of the Federal Government and the States, as your Board of Directors has pointed out. It is equally true that this program requires the full and active participation of the private owners who control four-fifths of all forest land in the United States.

Specifically, the Department of Agriculture favors the creation of a broadly representative Commission by the Government to study the forest problem with a view to formulating a more far-reaching national program, especially:

(1) Public assistance in strengthening and stabilizing the forest industries in order that they can undertake orderly production and continuous timber-growing as an industrial enterprise; and increased advice and assistance to farmers and other small forest owners;

(2) Larger public and private participation in forest fire protection in order to make it universal and effective;

(3) Large extension of Federal and State ownership, an immediate and assured means of restricting the field of destructive exploitation by bringing a larger proportion of the forest area under productive management as a measure of public security;

(4) Making public forests fully productive, especially through complete protection, more intensive management, and an adequate program of planting;

(5) Aggressive cooperation with forest owners and industries to abolish destructive forest exploitation and to create cooperative agencies to this end; and to stimulate larger industrial participation in an enlarged program of forest research;

(6) Investigation of the importance and feasibility of public measures to prevent destructive forest exploitation, including a study of public measures to this end in other countries.

Sincerely yours,

(Signed) W. M. JARDINE

Secretary.

RELIEF MAY BE IN SIGHT

L. F. Kneipp, Washington

On January 7 Senator Norbeck of South Dakota introduced Senate Bill S. 5269 to the effect that hereafter mining locations made under the U. S. mining laws upon lands within the Black Hills and Harney National Forests shall confer on the locator no right to the surface of the land covered by location other than the right to occupy, under the rules and regulations relating to the National Forests, so much thereof as may be reasonably necessary to carry on prospecting and mining.

In reporting upon this bill under date of January 18 the Secretary of the Interior, Mr. Roy O. West, made the following statement:

"This bill, if enacted into law, will place no restrictions upon the miners who seek the development of the mineral resources the lands within the forest reserves may contain, but will prevent unscrupulous persons from seeking to obtain title, under the mining laws, to such lands, for the purpose of exploiting other valuable resources the lands may contain.

"I am in favor of the enactment of the bill."

The bill was favorably reported out without amendment by the Senate Committee on Public Lands on January 22.

A few days subsequent to the introduction of his first bill Senator Norbeck introduced another bill of similar import but applicable to all National Forest lands in the Continental United States. If the attitude of the Department of the Interior and of the Senate Committee on Public Lands is the same toward the general measure as it has been toward the limited measure, the possibility exists for the elimination of one of the big difficulties with which the Forest Service has had to contend in its National Forests administration.

THERE MAY BE A CHANCE FOR WOMEN RANGERS

Brooms have been in use for years to put out dirt but have just recently proved equally as valuable to put out fire, declares the Carson Pine Cone. On a bunch grass fire, rakes are a poor fire tool as they catch on the clumps and the ashes run through the teeth. Swatters and sacks are fairly good but cannot get in between the bunches and the ashes fan into a flame after the fire fighter passes. On the recent fire in Oso Canyon, one man with a broom was claimed to be worth three with other tools. Workers with a wet broom could knock the fire down and sweep back the necessary ashes almost as fast as they could walk.—District 3.

ENTOMOLOGIST HAS THRILLING FLIGHT OVER LINCOLN

Answering a query of the Bureau of Entomology on the possibility of airplane dusting of the Ellopia defoliation infestation of the Cloudcroft Reserve owned by the Southern Pacific, B. R. Coad, in charge of cotton insect investigations at Tallulah, Louisiana, stated that he believed the project impracticable from a flying viewpoint, without heavy expense, for overpowered planes, to fly at elevations of eight to ten thousand feet. Bearing out his contention he describes a thrilling flight he recently made over the Lincoln with the equipment now used by the Bureau for plane dusting work on cotton insect projects: "When I came home from the West a couple of days ago I made a non-stop flight in the Stinson plane from Tucson to Tallulah. In making this I stuck as close as possible to an air line but as I had a comparatively heavy load of supplies and baggage, as well as the necessary gas for such a long trip the poor old ship was rather overloaded for high altitude and I skirted a little bit below the Cloudcroft region. Even at that though, I had about two hours flying where there were many times that it was quite doubtful whether the plane could get over the mountains ahead, and to my left I could see the ranges around Cloudcroft sticking up still higher. The last range I cleared was about 9,000 feet high, and, when I started over it, I had about 500 feet altitude above the trees with no more climb in the ship with the load I had. In crossing this range which was a very broad one, it was a constant fight to hold this altitude and occasionally we would strike down currents where drainage started flowing into a canyon which would pull the ship down 300 or 400 feet and then it was a question of fighting to get back this altitude. At the same time, this ship had no more load than a plane should carry to do profitable dusting and you can readily see that under such circumstances unless the area was very peculiarly located, to favor the operation, it would be foolish to undertake it. - District 3.

BRADFORD RESIGNS

By Carl Ewing, Malheur Forest

Forest Ranger F. V. Bradford, recently in charge of the Long Creek District on the Malheur, has resigned, effective November 30.

Fred is one of the old timers, having entered the Service first under appointment in May, 1910. He was for several years associated with former Ranger T. M. Ray on the Prairie City District and later was at times in charge of this district and of the Long Creek District.

He has had an active part in the development of the Malheur from the early days when stockmen were still quite openly defiant of governmental restrictions, to the present when their usual attitude is one of friendly cooperation. His experiences during this transition would make interesting history.

Fred has labored under a severe handicap during the past several years by reason of the continued ill health of his wife, and this, coupled with the fact this his personal business interests have perforce suffered through his absence at official headquarters elsewhere, is thought to have been responsible for his resignation.

Fred, or "Time" as he is familiarly called, and his wife have been mighty companionable members of the Malheur family and it is with regret that we announce their departure. Their plans have not yet been announced, but it is sure that wherever they go they will make a host of friends, and it is our hope that they may find health and prosperity and happiness in whatever they undertake.

A FIGHT TO THE FINISH

By M. J. Mapes, Olympic

About the middle of September, near the headwaters of the Dosewallips River within the Olympic Forest, some packers discovered two large elk with their horns locked. One was dead and the other alive. The packers went to the rescue and untangled the horns and the surviving battler beat a hasty retreat and joined the herd. Indications were that the fallen hero had been dead about two days. Had it not been for the timely rescue of the packers who freed the victor, he undoubtedly would have been an unvictorious victor after all.

YE EDITOR DISCOVERS

The Forester has written to all the State Foresters offering the cooperation of the Forest Service in developing plans for a forest week observance this year. No date will be fixed for a nation-wide observance. Each State will decide for itself whether or not to observe a forest week and in case the observance is decided on will choose a date to fit local needs and conditions. In the South it is expected that the observance will be region-wide and an endeavor is being made by State Foresters in the South to agree on a week for the whole region.

The Forest Service will have a limited amount of educational material available for distribution, including two or three new pamphlets and a bookmark, and a number of standard items in pamphlet, leaflet, or card form. A list of this material is now being prepared and will be ready for distribution in a short time.

Most of the States in favor of observing a forest week have expressed the desire to have a statement (not a proclamation) from the President to focus public attention on the effort. It is not known at this time whether such a statement can be obtained but the proposal will be submitted to the President as soon as possible after March 4.

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On January 23 Senator Steiwer of Oregon introduced in the Senate a joint Resolution, S. J. Res. 203, to establish a joint congressional committee to study the public domain and the National Forests and recommend a legislative policy in relation therewith. This resolution was referred to the Senate Committee on Lands and Surveys.

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The piece of petrified wood to be used in the base of the monument at East Tawas, Michigan, where a 5800 acre plantation on the Huron has been financed by the Michigan Kiwanis, has been prepared and shipped. District 3 undertook the work of getting the piece from the Petrified Forest National Monument, having a bronze plate cast and attached to identify it as the U. S. Forest Service contribution to the monument, and shipping the piece to East Tawas. The cost of preparation and shipment, which amounted to $32.50 was defrayed by individual contributions from the members of the headquarters offices of District 3 and 7 and the Washington office.

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Earle Kauffman of the American Forestry Association when in the office a few days ago told us about three prize story contests offered by the "American Forests and Forest Life Magazine" which may be of interest to many Forest officers. They are:

1. Man-Hunt Stories - For Forest Rangers Only

   Any story may be submitted which deals with a Man-Hunt - or it may be a woman. The story may be of a search for someone that is lost, or has disappeared, or it may deal with hunting down a fugitive. The ranger submitting the story need not necessarily have taken part in the hunt he describes, but may tell of the experiences of others. To the Forest Ranger submitting the best story in this contest goes the choice of a Radiola 16, complete with tubes, a Hamilton Watch, or a Fiala Sleeping Bag. Second Prize consists of a second choice, and the remaining article goes as third prize.

2. Juvenile Stories - For Rangers' Wives, Rangers, and Other Forest Officers.

The story may be one of adventure or service, humorous or tragic -- there are no restrictions as to its nature, except that it must be of a character to interest boys and girls of ten to fifteen years of age. The children may have served on a fire line, may have encountered a wild animal, may have been lost in the forest, or any of the things that make for real adventure. First prize $50, second prize $35, third prize $15.

3. Wilderness Adventure Stories - Open to both Forest Officers and the Public

The story of any experience in the wilderness may be submitted. Perhaps it is a canoeing trip in Minnesota; perhaps an overland camping trip in the Rockies; or perhaps a hunting or fishing trip into the wilderness of the Sierras. First prize choice of a new Remington bolt action express rifle, a Bausch and Lomb 8 x 30 mm Diameter Stereo Binocular, and a Metropolitan Comfort Sleeping Pocket with air bed. Second prize consists of second choice, and the remaining article goes as third prize.

Stories should not exceed 2,000 words in length, and should be accompanied by photographs when possible. All stories that fail to win prizes, but which are suitable for publication, will be paid for at regular magazine rates. The contests will close at midnight, May 1, 1929. All manuscripts must be marked for the contests in which they are entered, otherwise they will be dealt with as regular material submitted for consideration. Address all manuscripts to the Editor, "American Forests and Forest Life," Lenox Building, Washington, D. C.

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Ray Morley, prominent stockman of New Mexico with permits on the Datil Forest, was a recent office visitor. He reports feed in New Mexico as short but highly nutritive and carrying stock through the winter in better condition than usual.

FIRE GETS A SECOND WIND IN FRANCE TOO

Extract from a report on causes of fires, which appeared in Bois et Resineux.

"The most serious fires occur on the second day when the fire, controlled in the evening of the first day, breaks out again in the morning. Generally this takes place in regions without organized fire control."

SOUTHWESTERN RANGE GRASSES CURES OBSERVED

The oft repeated statement that southwestern range grasses cure "in situ" does not apply to all the grasses of the range land. Observations made on the Jornada Range Reserve during the past two years show that Black Grama and Porter's Muhlenbergia are exceptions which do not cure. The stems of these grasses remain alive throughout the winter and leaf out again in the following spring. The high palatability of these grasses is due to the fact that they furnish green feed year-long while most other grass stems die soon after the close of the growing season. - District 3.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people*** Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII. No. 6 WASHINGTON, D. C. FEBRUARY 11, 1929

THE DAYS OF "MUSK AND INSOLENCE"
(1908 - 1928)

By Jno. D. Guthrie, D. 6

In December, 1908, the six western forest districts were established. The wisdom of that move by Pinchot and Price has long been recognized by the Forest Service, and also by the western public, if they would but admit it. In November and December, 1908, the big exodus was taking place, the great trek westward from Washington, D. C., was going on. It was a big and important experiment in government organization, "a noble experiment" in decentralization, let us say. It meant much to the men and women in it, and it has meant far more to the western States and communities which it affected so greatly. It was a wise move; it robbed our critics of much of their ammunition; it was but another example of Pinchot's statesmanship. The "Six-Twenty-Six", our "train-schedule-sounding monthly" news letter of the North Pacific District, therefore, fittingly observed the twentieth anniversary of this event with several special articles by many of the old-timers in the District. Fred Ames, Shirley Buck, and Mrs. Frances Smith, who were part of the old Inspection District, which preceded the present scheme of organization, are still with us, and in the field, Tom Sherrard and Hal Sylvester are the only two remaining Supervisors of the days of '08; there are several Rangers of those days still in the District. E. T. Allen, now with the Western Forestry and Conservation Association, had been chief inspector and became the new District Forester. Will Staley, Albert Cousins, and Miss Katherine Reid, are the only remaining ones with us now who were part of the original great march across the plains. The total personnel of 1908 (including the 10 men in Alaska) was but 292, of which number 162 were Rangers under yearlong appointment. It is significant to note today that there are only 162 yearlong Rangers! With a tremendous increase in work and responsibility, with larger areas to handle, with a greater total area in the District, does this mean we now have all Super-Rangers? Or is it due to work plans?

We had then Forest Rangers, Deputy Forest Rangers, and Assistant Forest Rangers; now we have Principal Forest Rangers, Senior Forest Rangers, and Assistant Forest Rangers. The 1908 brands sounded better, but the 1928 brands cost more. We had 72 forest guards under appointment - to my mind a most satisfactory title and arrangement. Now, it's quite a job to figure up how many lookouts, patrolmen, smoke-chasers, lookout-firemen, firemen-lookouts, etc., we have, but it would probably be around 700 or 800.

The District Office personnel in 20 years has increased from 65 to 84.

Sylvester in recalling the old days on the Wenatchee says significantly: "The thing that first appeals to me as my mind wings back across the years, is that the Service has made no ruts, except to grow deeper into the consciousness and esteem of the people of the United States. It has continually blazed new trails. The institution of the District Offices was itself a new trail and what a difference it made to the Supervisors in this far Northwest! --- District 6 has made progress surely. Old trails have been rebuilt; new ones have been blazed! We build higher on the ruins of earlier years. The work goes on."

Tom Sherrard was then and now is Supervisor of the Mount Hood, the Peak which Lt. Broughton in 1795 and the tramway of 1928 keep famous. Tom reminisces in part as follows:

"Twenty years ago a Forest Supervisor was more of a free lance than now. In 1908 none of the thousand and one things that a Supervisor may not do had been thought up.

"The fiscal regulations did not weigh two whole pounds. The rain of circular letters had not even been forecast. The 'Use Book' was a convenient little pamphlet that could be carried around in the cuff of your overcoat. No Supervisor of that day dreamed that such an inoffensive and helpful little book would expand into the present day manual and handbooks, the actual bulk of which has never been accurately computed.

"There was no one between the Supervisor and The Forester in far-away Washington. Here and there an inspector might be fairly close on a Supervisor's trail, but on the whole a Supervisor was pretty much on his own.

"These were the days when, according to an editorial in the 'Oregonian', 'The minions of the Forest Service reeked of musk and insolence!'"

Materially, the North Pacific District has grown with the West, from the days of small, disorganized commercial clubs to these days of well-oiled and high-gear Chambers of Commerce (with even forestry committees) and whole litters of luncheon clubs.

Fiscal year 1909 closed with an expenditure of $457,000 for D-6, from two appropriations, General Expenses and Improvements (Executive Assistants, look ye, and weep!) Now, in this great year of 1928 our expenditures were $2,764,000 from 9 major appropriations and 14 sub-appropriations, with R & T into 3! As Albert Cousins, our fiscal agent of 1908 and 1928, says, "Thus we have become more complicated!" He also remarks that "we have been developing a steady growth in our spending technique".

One D-6 Forest in 1908 (F. Y. 1909) had a total allotment of $27,578; in 1928, it struggled along with $159,000.

Receipts likewise have jumped. Under Fred Ames' careful and conservative nurturing, Timber Sales receipts have grown from $60,969 in 1909 to $965,078 in 1928. Timber Trespass is about the same, $5907 in 1909 and $5462 in 1928; the world is still unregenerate. Grazing has also increased, by $56,944, due no doubt to our modern, scientific, hair-splitting grazing fees, for in 1928 D-6 had much less livestock than in 1908. Lands has changed its mental slant, from fighting timber-homesteaders and fake locators and boundary eliminators of 1908 from coming on Government land, to inviting, urging, cajoling and insisting that the great public come onto the National Forests, to rest, recuperate, and recreate, at so much per summer home lot. And it's making it pay too, for in 1909, the L receipts were a measly $3901, while for 1928 they were $26,168. Water power has jumped from $2312 to $6,456. Fire Trespass receipts were 0 in 1909 and $4302 in 1928. Fire-fighting cost $16,947 in 1909; I blush to mention such costs of modern days. Of course, we're better fire fighters now - we've been practicing for 20 years.

With all the changes which have taken place in these 20 years, perhaps the greatest of all has been the change in public sentiment toward forestry and the Forest Service. Those were the days of the "timber barons" and "malefactors of great wealth". In the eyes of the average lumberman, foresters were mere microbes, hardly worthy of serious attention. The famous timber fraud cases of the Northwest were still fresh in the public mind, and "the Government" was none too popular in these parts. When the press did notice us, it was to ridicule, revile, malign, and misrepresent. We were the blockers of progress; we were the lockers-up of natural resources; the name of Gifford Pinchot was anathema maranatha to many papers and many of the people of the region. Especially was one of the leading local papers a bitter enemy of the Service and Mr. Pinchot.

We all know how different is the attitude of the press and the public today. What has brought about that change? Surely, it didn't just happen. I believe it is almost entirely due to the high character of Forest officers throughout the twenty years since 1908. If I am right, then no higher compliment can possibly be paid to the Service as an organization than that its members were honest and loyal and at all times tried to be fair and yet faithful to their trusts as guardians and managers of the public's properties.

"A ROSE BY ANY OTHER NAME"

By L. F. Kneipp, Washington

For some years past considerable public thought, sometimes of rather a feverish and intensive character, has been focused upon the preservation of wilderness conditions within parts of the National Forests. Colloquially the most common distinction has been that of "wilderness" areas, but there have been variations such as "virgin," "natural," "recreation," "pristine," etc. But in the light of cold actuality, the applicability of any of these designations comes seriously into question. In a country which has been combed and explored and exploited so thoroughly as the West has been during the past half century, there are few areas which completely measure up to any of these appellations. Apparently the most that now can be done, and the most that actually is demanded by the advocates of this policy of preservation, is the maintenance of primitive conditions of travel, subsistence, habitation, and environment, with considerable variation in the standards of primitiveness, which in some instances may be that of the Indian or in other instances that of the early fur trader or trapper, or the pioneer miner, or the pioneer stockman or settler. In view of this fact the term which would be the most accurate description of the conditions practical of maintenance would be "primitive," which therefore is offered for consideration by the field and for any comment, critical or otherwise, which any Forest Service purist may wish to make.

The term "natural" implies a distinction which within a National Forest apparently would be quite illogical, since there is nothing unnatural about the average National Forest. A "wilderness" is of questionable applicability within areas where prospectors, stockmen, etc. have roamed for generations and where the trails and telephone lines and patrol headquarters of the Forest Service inevitably must find a place. An area may be "virgin" so far as timber cutting is concerned but hardly in that category in relation to numerous other forms of use. So the term "primitive" seems to most accurately picture the condition which actually can be maintained by the Forest Service within these areas, but any member of the Service who can propose a better term will be given a citation in the Service Bulletin.

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Asst. Supervisor Nave and Ranger Arnold recently have made a Christmas tree plan for the Sandia District. This was necessary in view of the increasing demand for holiday trees and greens. While we have orders (2 car loads) for trees to be sent out of the State, these cannot be handled as only sufficient trees for the City of Albuquerque and the immediate vicinity are available. - Manzano Ranger.

H. R. 16078

By Fred Morrell, D. 1

Some ten years ago I rode one evening into a ranger station in Colorado where I had a few weeks previously approved the installation of a bathtub. It was midsummer, and I was tired. I had been several days "on the road" and the thought that my "generosity" in approving this purchase was about to be rewarded was a comfortable one.

As soon as the usual greetings were over I said to Mrs. Ranger "Has Frank gotten the bathtub installed out in the office building yet?" "No," she answered. "That's too bad," I said. "I've been waiting a week for a bath in it." "You have none the best of me" was the reply, "I've been waiting ten years."

The above is related for its value as a story, not that it is a good introduction to the Englebright bill which authorizes appropriations for "protection" improvements in the National Forests. Bathtubs wouldn't, of course, rate very high as "fire protection" improvements, although they do rate high as equipment valuable for some other forms of protection. But the story possibly illustrates a point. There has been a long period of waiting for telephone lines, lookout houses, cabins, etc., needed for fire protection and this has evidently come to the attention of Congressman Englebright from sunny California, who has introduced the following bill in Congress:

"A BILL

Authorizing appropriations for the construction and maintenance of improvements necessary for protection of the national forests from fire, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That there is hereby authorized to be appropriated for expenditure under the direction of the Secretary of Agriculture, for the construction and maintenance of fire lanes, telephone lines, cabins, lookout houses, fences, fire-prevention roads and trails, and other improvements necessary for the proper and economical protection of the national forests for the fiscal year ending June 30, 1931, $4,500,000; for the fiscal year ending June 30, 1932, $4,500,000; for the fiscal year ending June 30, 1933, $4,200,000; and thereafter $4,000,000 annually, or such other amounts as Congress may hereafter provide. Of the foregoing amounts not to exceed $3,000,000 annually may be expended for the construction and maintenance of roads and trails for fire-protection purposes, and $200,000 may be expended annually for the construction and maintenance of boundary and range division fences, counting corrals, stock driveways and bridges, the development of stockwatering places, and the eradication of poisonous plants on the national forests, and in cooperation with the Biological Survey, or otherwise, for the eradication and control of range-destroying rodents on the national forests."

Lest there be any reader who is not familiar with the system of appropriating money, let me say that this bill if passed will not make any additional funds immediately available for protection improvements. It will amount only to a recognition on the part of Congress of the need for these improvements, and perhaps an intent to appropriate money for them as soon as that can be done considering the condition of the budget and other needs.

TOWN FORESTS' RECREATIONAL VALUE STRESSED

Town forests not only are taking rank with National and State forests but promise to spread over the United States to become the source of recreational and economic worth they are in Europe, in the opinion of various town forest committees, meeting in Boston in what is said to be the first conference of its kind ever held in the country.

"No proof need be furnished that 1,000 trees, grown in one's home town forest, are more to be desired than 10,000 in some distant park," said Harris A. Reynolds, Secretary of the Massachusetts Forestry Association. "Town forest growth seems to hinge mainly upon a wider dissemination of the news of its benefits."

Mr. Reynolds reported that since passage of the United States' first town forest law by Massachusetts, 80 towns in the State have acquired forests of their own, with 1,918,750 trees planted.

In an address on European town forests, John H. Foster, State Forester of New Hampshire, told of one Swedish town that not only freed itself from taxes but provided free street-car service and a free library from the profits of its town forest.

"In Switzerland, where town forests have been the vogue since the Roman invasion," Mr. Foster continued, "two-thirds of the forests are municipally owned. Many Swiss towns have made their inhabitants tax free through their forests, the average realized being nearly $8 a year from each acre without decreasing its value. Throughout France, and Germany as well, fuel, industrial lumber, employment and a place of recreation are furnished by the many town forests."

Evidence that similar results may be approached in the United States was furnished by Prof. Richard T. Fisher, Director of the Harvard Forest. The little town of Petersham, Mass., was several years ago offered $10,000 for its poor farm, long since abandoned because of lack of occupants, Professor Fisher related.

Upon being advised by the Harvard Forest to retain the farm as a town forest, he said, such progress was made that $5,000 worth of timber has already been obtained, while $35,000 may be realized from the three cuts available during the next 20 years without diminution of its worth. - From The Christian Science Monitor, Dec. 7, 1928.

THE BUFFALO AND EROSION

By E. N. Munns, Washington

Few of us who live in an age when the buffalo can be seen almost solely in the Zoos, realize to the full the enormous herds of buffalo that once ranged over prairies. Furthermore, many of us who have read of the herds on the open western prairies fail to realize that the buffalo also ranged through the East. How far east we do not know, but certainly the valley of the Mohawk in New York knew the bison, for there are records of buffalo being taken as far east as Syracuse, and the city of Buffalo derives its name from a buffalo lick. Buffalo were also common in the Shenandoah Valley of Virginia in very early times and Braddock's road from Cumberland to Fort Pit, now Pittsburgh, followed an old buffalo trace, in part at least. The early roads from Fort Pit to the "Illinois County" in the latter part of the 18th century followed these buffalo traces, and the road from Lancaster, Pa., to Pittsburgh is supposed to be in part the route followed by these animals. So it was all through the Ohio Valley States, the buffalo traces served as highways. While these were not the smooth roads to which we are accustomed, when dry they afforded a relatively easy means of progress across the supposedly "trackless wilderness" of which we have often heard.

Many of the early writers tell of the barren areas surrounding the salt licks where the buffalos had destroyed all but the tallest trees about them, these being used as "rubbing posts." Also, these writers tell us of the total destruction of all vegetation along the traces or buffalo trails - one hundred to four hundred yards wide - and of the closeness of the grazing on the prairies. Early settlers had difficulties in keeping these herds from their cornfields - sometimes they didn't! One English traveler in 1836 noted that "the banks of the river were broken down and the grass utterly destroyed by the thousands of these brutes." Another writes that "the whole country was deeply furrowed by their tracks, as in long lines, one after another in Indian file, they had proceeded southward." Another said "the prairie after the herds of these huge animals had passed were dust heaps that the first rain turned into quagmires." Many other travelers and hunters tell of being able to descry the presence of the buffalo on the prairie by reason of the great clouds of dust they stirred up when on the march.

All of these would seem to indicate that the prairies were overgrazed - at least temporarily - as the herds moved from one locality to another, and that migration, trampling, and the congregation about salt springs and salt licks resulted in the destruction of the vegetative cover. Undoubtedly these animals, operating much the same as large herds of cattle, were directly the cause of much erosion and the loss of much soil. However, except for the damage at salt licks and the damage to stream banks, it is not believed that this overgrazing resulted in much serious erosion, for it was spread out and was not a continuous process on the same area year after year so that valuable plants were completely exterminated or the sod so torn that it could not recover. The proof of this, as far as the Ohio Valley is concerned, is in the fact that the waters of the rivers in this drainage were generally clear and free from silt until after land clearing and farming on an extensive scale developed. So although the buffalo may have caused some erosion, this was slight compared to the major operative factors set in motion by the activities following settlement and land clearing.

YE EDITOR DISCOVERS

The Forester has just issued a certificate of Practicing Forester to Ranger Wm. M. Hurst of the Dixie Forest for having demonstrated proficiency in the handling of forest resources in addition to having completed ten manual review and fourteen general courses.

This is the second Forest officer to date that District Forester Rutledge has recommended for the certificate. Looking over the requirements, it is quite evident that years of study and long experience in actually managing forest resources are necessary to qualify. This certificate is a tribute to real accomplishment.

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The big insect control jobs during the coming spring are to be in Districts 4, 1, and 6. In District 4 a number of areas of lodgepole pine lying south and southwest of Yellowstone Park are to be worked, chiefly by burning the trunks of the trees standing after spraying them with oil. The thin bark of lodgepole apparently makes this method practicable in this region. The District has been given an allotment of insect control funds sufficient to meet the estimated cost of cleaning up known infestations on the Targhee, Teton, and Wyoming Forests, where the infestations are most important from the viewpoint of danger of spread into the Park and through the enormous belt of lodgepole pine which surrounds it; and also enough to handle scattered infestations on the Caribou and Cache Forests where the insects are less of a general threat but are killing timber needed for local supplies.

In District 6 mountain pine beetle epidemics are to be fought on the Fremont and on the extreme east edge of the Deschutes Forests. In both cases cooperation from the owners of intermingled or adjacent patented timberland is a feature of the undertaking. Work may also have to be done in the lodgepole pine stand to the east of the Crater National Park, if the Park Service is able to do its share by cleaning up the infestations on its side of the Park-Forest line.

In District 1 an effort will be made to clean out the infestations in western white pine on the Steamboat Creek drainage of the Coeur d'Alene Forest. Work will also be done in some of the infested white pine stands on the Kootenai Forest in western Montana, especially on those areas on which timber will be readily salable if it can be saved. On other areas on this Forest, where the opportunity to cash in the results of insect control work will be poor, nothing can be done this year.

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Carlos G. Bates of the Lake States Forest Experiment Station attended the annual meeting of the Canadian Society of Forest Engineers, held in Winnipeg, Manitoba, during the week of January 13-19, and delivered a very interesting paper on the subject "Some Problems of Seed Production, Collection, and Distribution." Mr. Arthur H. Richardson, Secretary of the Society, in writing to the Forester about this meeting said:

"Mr. Bates read a paper which evoked considerable discussion from the foresters present and which was favourably commented on by many of the delegates in attendance.

"It was the unanimous wish of the members that the Secretary write to you expressing the deep appreciation of the Canadian foresters for allowing Mr. Bates to come to the meeting and also to extend to him their hearty thanks for the splendid contribution which he made."

DEW PONDS

For centuries the dry slopes and ridges of Sussex Downs, in the south of England, have been given over to the pasturing of sheep, says the Washington Star. These creatures can live with very little to drink, but they suffer from thirst if cut off from water altogether. "...The shepherds have from times immemorial made good the deficiency by constructing what they call 'dew ponds.' These are nothing more than a cold spot on the earth which continually precipitates the moisture from the air passing over it. The cold spot is placed on the hill-top because there it encounters air that has not lost vapor through previous contact with the earth. The best dew-pond makers are the men of Wiltshire, as all sheepmen in England will admit. The pond, having been excavated to the right depth and shape, it is lined first with puddled clay or chalk, then with a thick layer of dry straw. Finally upon this straw a further substantial coating of clay is laid and well beaten down. Nothing is needed then but a few carts of water to start the pond, and to put a ring fence about it. The action of the straw in its waterproof double casing is to intercept the heat radiation of the earth at that particular point, so that the pond cavity and its contents remain colder than the surrounding soil..." The Producer, November 1928. Clipped from D. 3 Bulletin

THE FOREST SERVICE MAKES ITS BOW IN THE FORM OF A NOVEL

The Ordeal of Brad Ogden, a novel by Arthur H. Carhart, took its place on the news stands of the country, January 15, 1929. The story is on the conflict between an old time grazing permittee and a progressive Forest Supervisor in the Central Rocky Mountains. Through fairness, stedfastness, and the exercise of ability and good judgment, the Supervisor wins over a new friend to Forest Service ideals. There are many exciting indicents including personal encounters, forest fires, and everything. The locale and personnel, though to a great extent composite, will contain many familiar places and persons for those acquainted with the Forest Service in central Colorado. This novel appeared in the Blue Book in June, July, and August 1928 under the name "The Forest Legion". It is published by J.H.Sears & Company, New York, price $2.00. - District 2.

WE ARE ADVERTISED BY OUR FRIENDS

From Leadville, in the center of an important Colorado mining section, come the following newspaper editorial comments on an "open letter" criticising the Phipps grazing bill.

"The domination of the National Forest bureau has a formidable sound, but it need not terrify us This domination in Colorado has not been at all detrimental to the best interests of the State, and we had supposed that railing at the Service had rather gone out of fashion.

"It may be true that "approximately one-fifth" of the total area of Colorado is under the control of the forestry bureau The State has not suffered from this administration in spite of the howl that went up during the Roosevelt regime when the conservation policy was first introduced. The looting of the remaining forests of the State was brought to an end; the range was equitably divided between the sheep and cattlemen, and the warfare between the two industries ended. The forests have been saved for the people, instead of being despoiled by private greed and exploited for private profit.

"The land is not even taken off the tax roll, for most of it never would be on, but under bureau administration, much of it has been made to yield revenue, a percentage of which goes to the various counties.

"The hostility of the forestry bureau to the settler seems to be mere assertion not backed up by proof. The public land of the State should have the benefit of expert and intelligent administration.

"Of course, the chronic cry against Big Business is always with us like the poor. However, we have no objection to Big Business bringing in several thousand sheep to feed on the upland ranges, adding to the tax roll of the county a few thousand dollars." - District 2.

THE BROADER EDUCATION

"For a man to be educated he must at least have touched something of what is fine enduring, distinctive - of what is set apart from all that is practical, severe, and concrete. He must have felt the glow of higher enthusiasms, of perhaps impractical idealism He must be able to set up for himself some standard of comparison, some scale of relative values, even though crude and ill defined, by which he can judge present performances and assay their worth. Until we realize that the most important half of our education lies entirely outside of technical training we will not succeed, we will not even be called upon as leaders in a new world - or in an old old world, if you like. And it is entirely right that this should be the case." - Thomas Thomson Towles in Eng. News Record

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII NO. 7 WASHINGTON, D. C. FEBRUARY 18, 1929

PROGRESS OF SUSTAINED YIELD REGULATION IN THE NATIONAL FORESTS OF CALIFORNIA

By T. D. Woodbury, D. 5

Carter's circular letter (S-Supervision, Forest Regulation) of December 6, 1918, in which he brought regulation into the foreground, requested a report upon the status of plans of regulation in the several Districts, and stimulated the preparation of simple, sensible plans where actually needed, is a landmark in the development of American forestry practice because it initiates the era of "working plans that work". The artificial stimuli previously applied by the Forester's office in attempting to secure results in this line of work from District officers and Supervisors unconverted to their need had resulted in a few rather weird and unreal documents that usually had no bearing upon the crying, live problems of timber administration. A District Forester of that day (who has since moved upward) aptly expressed the general sentiment in regard to such plans when he stated in a letter to a contemporary "the preparation of a detailed Silvicultural working plan is more of an exercise of the imagination than a beneficial administrative activity." Between 1911 and 1918 six plans of this type had been prepared in this District. In California we were just beginning to realize, in 1918, the need of real plans in five or six localities where current cutting was heavy, or where contemplated mill installations forecasted cuts that would tax our resources.

The job of preparing these plans was assigned to Forests. Assistance has been given by the men in the District Office of Forest Management in outlining the general plan of attack and by giving advice regarding problems that arose during the course of the work. The Research organization has furnished data indicating the length of time it takes trees of the various species to grow from one diameter class to another as a basis for calculating future cut and has helpfully reviewed the finished plans. The simplest methods have been employed. Rotations have been based upon the length of time necessary to grow sawtimber of from 24 to 28 in.D.B.H. Yield during the first cutting cycle has been calculated by spreading the stand to be cut, under prevailing marking practice, over the cutting cycle. As a basis for rough predictions of second cut, site classes usually have been averaged, thus necessitating the preparation of stock and stand tables for the predominating site only. The bases for these tables are secured by tallies of dominant and codominant trees on current, similar cut-over areas, or by sample markings in virgin stands. Growth predictions are based upon diameter growth tables and present standard volume tables.

The progress that has been made in this line of work is indicated in the following table, which includes only plans approved by the Forester. About 619,000 acres are under regulation containing 10,400,000 M, or a little over 10 per cent of the estimated merchantable timber in the District. The average annual cut, under regulation, (about 70,000 M) amounts, at present to 23 per cent plus of the total annual cut of the District. The actual cut is 121 million less, in round numbers, than the allowable cut, due in large measure to the fact that cutting has not yet started on any appreciable scale in the Lincoln Highway, Pit River-Goose Lake Valley, and the Auburn Working Circles. Heavy cutting will start next year in one of these areas.

The figures in the columns headed "annual cut (allowable)" and "predicted second cut" pertain only to National Forest land except in the case of the Meadow Valley Working Circle, Plumas National Forest. This is the only area under regulation within which the private lands are being handled in the same way as the Federal area so as to guarantee a comparable second cut.

In connection with the preparation of all plans involving considerable acreages of private land under the control of the operator concerned, silvicultural and management prescriptions have been outlined for the alienated land. These programs have been taken up in conference with operators with varying results. Usually fire protective suggestions are readily accepted and well executed. Suggestions regarding limitation of cut on private lands, however, particularly when such action would necessitate a reduction below the present actual cut, are regarded with apprehension and are not agreed to except when the future welfare of the concern in question is dependent upon securing the allowable cut of Government timber. Even then the agreement is reluctant and its execution in the woods leaves much to be desired. The very large amount of private land mingled with Government land in the National Forests of this State in the pine region clearly indicates a rather restricted field for the application of sustained yield unless owners of private timberland adopt this system of regulation on a larger scale within the next few years.

Doubtless there are many readers of this publication who are interested in the progress made in bringing about sustained yield management on National Forest lands. Let's hear from some other District!

STATUS OF SUSTAINED YIELD - DISTRICT 5 - NOVEMBER, 1928.

FOREST	WORKING CIRCLE	DATE APPROVED	FEDERAL ACREAGE UNDER MANAGEMENT & related pvt. land	TIMBER STAND M Feet	ROTATION	CUTTING CYCLE	ANNUAL CUT (Allowable) M. Ft.	Avg. ANNUAL CUT (Actual) M. Ft.	PREDICTED SECOND CUT M. Feet
Elorado	Lincoln	1-6-25	Govt. 58,459	Govt. 1,674,761				Gov. 1000	
	Highway		Priv. 38,693	Priv. 1,136,000				Pvt. 1000	
			Total 97,152	Total 2,810,761	130	65	37,000		18,000
	Monolake		Govt. 45,000	Govt. 564,000					
Inyo	Owens	3-29,	Priv. -	Priv. -				Gov. 1000	
	River	1923	Total 45,000	Total 564,000	140	70	7,000	Pri. -	3,500
	Eastern		Govt. 170,000	Govt. 2,900,000		1st-70	50,000*	Gov. 30000	
Lassen	Lassen	5-23,	Priv. 33,000	Priv. 800,000		2nd-50	25,000**	Pri. 42000	
		1922	Total 203,000	Total 3,700,000	120?				40-50,000
			Govt. 6,378	Govt. 75,000					
	Bidwell	2-28,	Priv. 372	Priv. 2,000				Gov. 250	
		1927	Total 6,750	Total 77,000	120	60	566		816
			Govt. 21,000	Govt. 63,000					
Modoc	Lake	3-2-27	Priv. 440	Priv. 2,400					
	City		Total 21,440	Total 65,400	120	60	744	Gov. 500	1,000
	Pit River		Govt. 86,000	Govt. 1,263,000					
	Goose	12-2,	Priv. 11,000	Priv. 155,000				Gov. 1,300	
	Lake Val.	1924	Total 97,000	Total 1,418,000	120	60	15,600	Priv.1300?	16,000
			Govt. 29,000	Govt. 800,000					
Plumas	Meadow	3-30,	Priv. 9,000	Priv. 165,000			***	Gov. 4,500	
	Valley	1923	Total 38,000	Total 965,000	100	50	16,000	Priv.4,500	9,000
			Govt. 161,500	Govt. 1,800,000					
	Eastern	3-10,	Priv. 43,000	Priv. 400,000		****		Gov.31,000	
	Plumas	1926	Total 204,500	Total 2,200,000	120	45	32.000	Pri.10.000	19,000
			Govt. 41,380	Govt. 1,273,000					
Tahoe-Eldo.	Auburn	4-18,	Priv. 62,140	Pri. 1,637,000				Gov. None	
		1927	Total 103,520	Total 2,910,000	110	55	46-50000	Pri. None	45,000
			Govt. 618,717	Govt. 10,412,761					
TOTALS:			Priv. 197,645	Priv. 4,297,400				Gov.69,550	
			Total 816,362	Total 14,710,161			190,910	Pri.58,800	162,316

* 50,000 for 20 years. ** 25,000 M for 50 years. ***Made up of National Forest and privately owned timber combined. ****Area now fully stocked with young growth 30 years old. NOTE: In addition to the above acreage included in approved Management Plans, work is underway which should result in placing approximately 330,000 acres more of National Forest land on a sustained yield basis within the next two years. This area contains about 7,200,000 M Ft B.M. merchantable timber.

AIRPLANES AND WILDERNESSES

(Fred Morrell's renowned discussion of the possible invasion of wilderness areas by airplane contains more truth than poetry if we can judge by the serious attention being given to this subject by the Park Service. The following is quoted from a Department of the Interior press release):

Secretary Roy O. West has sent out invitations to two score interested parties to attend a conference in his office on February 20, next, for the discussion of the possible admission of airplanes into the National Parks and the conditions under which they should be admitted.

The tentative policy of the Department upon the admission of airplanes to the parks was outlined by Secretary West in his recently issued annual report, which said:

"Usually the wilderness character of the parks is one of their strongest appeals. The policy of the Park Service, therefore, has been to preserve the beauties of nature in their original form but at the same time to make the principal points of interest accessible to the millions who make their pilgrimages each year....

"It is urged that no encouragement should be given to the use of airplanes as sight-seeing conveyances, for the reason that it is impossible to obtain an accurate conception of the beauties and wonders of National Parks by flying over them at safe altitudes. Others aver that only from the air can a view be obtained of generally inaccessible and most interesting places. There appears to be no general objection to the employment of airplanes between airports in the parks over routes to be established by the National Park Service and regulated by that service. It seems evident, too, that unless airports shall be provided within the parks, under park supervision, the service can not expect to control flying over these areas."

DIARIES

By John H. Hatton, D. 2

There are diaries and diaries. But did you ever keep a personal or semi-official one? Will. C. Barnes has for more than 40 years, and I think much of our interest in his writings is due to the human and personal touch he portrays of life and things through his daily notes and records.

I was looking through our home library on New Year's Day, 1929, for an old fashioned red-bound song book from which to play and sing some old time songs. I found a red-covered book of similar size and appearance but on the front cover was: "1902 Diary". Each page was like an old friend. It told of official and personal incidents during part of my first year in the Forest Service when we lived in Washington, D. C. on a salary of $40 per month, and when budgets and a record of expenses were all important -- if we wished to avoid a visit from the sheriff. I will quote just a few items bearing on this phase of our life.

> January 13, 1902. "Work in office on height and annual growth curves - Shoes wearing out - bought another pair. $3.50 - proving more and more the impossibility of saving anything on present salary in Washington."

Sunday, January 19, 1902. The record for this day mentions at some length an address from a returned missionary to India. For this narrative, the point is in the following:

"Couldn't help dropping a quarter into the collection basket when it was passed around." (About a day's board).

January 20, 1902. "Usual work. Read and feasted in evening - the occasion, Baker's birthday - jelly, fudge, walnut chocolates, devil's food, Swift's tongue sandwiches, salted peanuts (all sent by his sweetheart, a domestic science girl in Michigan). A glorious feast but not conducive to a very good night's rest."

January 23, 1902. "At Mr. Pinchot's in evening. Lecture on Priest River Forest Reserve of Idaho by Mr. Allen of the Working Plan Section. Refreshments of baked apples, gingerbread and real cream". (Each Thursday evening we attended similar lectures and incidentally filled up.)

Following is a sample of some actual expense items:

"April 5, 1902	Meals	35¢	35¢
" 6, "	"	30¢, collection 10¢, fruit 15¢	55¢
" 7, "	"	35¢	35¢
" 8, "	"	35¢, atlas 25¢, stamps 10¢	70¢
" 9, "	"	35¢, laundry 24¢	59¢
" 9, "	Missions		2.60
" 9, "	Diary and note book 30¢, book bound 65¢		95¢
" 10, "	Meals, etc.		63¢"

(April 9 was a heavy day).

April 11, 1902. This day described very fully the scenery and forest conditions from a Baltimore & Ohio Pullman car window. Baker and I were enroute from Washington to the field, but I note the forestry record was preceded with mention of our first meal on Uncle Sam after six long months in Washington:

"Breakfast at Janesville, Ohio - our stomachs very happy to receive a good square meal."

PROGRESS OF SOUTHERN FORESTRY EDUCATIONAL PROJECT

Despite the spread of influenza in the Southern States, which has closed many schools and prohibited programs in others, more than 120,000 people, 70,000 of which were children, had been reached up to January 1, 1929, by the five educational trucks of the Southern Forestry Educational Project of The American Forestry Association in Florida, Georgia, and Mississippi. More than 900 lectures and motion picture programs had been given. In addition, approximately 10,000 people were given programs at State and County Fairs.

The educational trucks are operated by teams of two men, a Unit Director and a Lecturer and Motion Picture Operator. The Unit Director precedes the truck into a County giving short talks before Chambers of Commerce, Women's Clubs and School Boards, and arranges for the educational truck, which follows him by several days, giving motion picture shows and lectures on the evils of woods burning, and acquainting the people with simple forestry facts. The greater part of this work is in the rural schools of the three States. At each program both the Unit Director and the Motion Picture Operator distribute fire prevention and forestry literature, as well as place posters in prominent places. Also, they interview many farmers interested in improving their woods, and send the facts to the State Forester who makes further investigation.

The Southern Forestry Educational Project was inaugurated at Waycross, Georgia, in September 1928 and was made possible by a fund of $150,000 raised by The American Forestry Association. The campaign will cover a period of three years.

MR. BARNES THANKS HIS FRIENDS

To his many friends in the Washington office, who last Christmas presented him with a pair of platinum cuff links on which was engraved the Forest Service shield, Mr. Barnes has written the following note of thanks:

"Dear Mrs. Chapline and Mrs. Kelley: (The Purchasing Committee)

"Please let me speak through you to the dear friends in the Forest Service who sent me the cuff links on Christmas day.

"It is useless for me to try and put into words my appreciation of the kindly feeling that prompted the gift.

"No links will ever be necessary to bind me to the folks in the Service. I shall never look at the Service shield so beautifully engraved on them without realizing how much you all mean to me and how greatly I miss the contacts of the old job. And this goes for the lady with whom I am boarding."

YE EDITOR DISCOVERS

The third New England Forestry Congress, held at Hartford, Conn., February 1-2, and the winter meeting of the New England Section of the Society of American Foresters on January 31 brought together a large number of foresters and others from all over New England. Especial attention was given to the problems of marketing New England forest products and problems of outdoor recreation. Silviculture, forest protection, and floods and waterpower were also considered. The Congress adopted resolutions urging increased appropriations under the McSweeney Act and for acquisition of National Forests, and urging that forestry be given due recognition in plans for flood control. Another resolution favored the addition to National Forests of all public lands not needed for other purposes. A forestry plan for New England was submitted by a special committee and approved by the Congress. This recommended large increases in the area of public forests, including National, State and town forests, and various measures for encouraging private forestry, including tax reform, market studies, forest research, and more intensive public activities in protection against fire, insects, and disease.

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The annual meeting of The American Forestry Association will be held at the Carling Hotel, Jacksonville, Florida, February 27 and 28 and March 1, marking the first time that a forestry conference of this scope has been held in the far South. There will be many noted speakers at the meeting, among them being Associate Forester E. A. Sherman, Dr. Charles H. Herty of the Chemical Foundation, New York, and Dr. David Fairchild, senior plant explorer of the Department of Agriculture.

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District Forest Inspector Crosby A. Hoar of the Lake States recently arrived in Washington, on a month's detail to the Division of State Cooperation, Branch of Public Relations. At the present time he is engaged on the compilation of Michigan and Wisconsin State laws.

AN ERROR

In assembling the February 11 issue of the Bulletin we find that pages 3 and 4 were in some cases omitted and two pages of 5 and 6 included. We have about 200 extra copies of this issue, and for those who wish to keep a complete file of the Bulletin we shall be glad to replace, in so far as possible, copies that are incomplete.

THE DISTRICT THREE 1928 TRAINING CAMPS

By Stanley F. Wilson, D. 3

By holding a senior training camp this year, followed by a junior camp, District 3 completed five years of annual training camps and with a single exception, all Supervisors, Deputies, Rangers and Assistant Rangers have now attended camp.

Our camps are designed:

1. To give new men (both technical and non-technical) fundamental practical training in ranger work.
2. To give men older in the Service an opportunity to acquire further knowledge of the best practices in forest work - particularly along the lines of fire, and of forest and range management.

In addition to results from the above two purposes, we count heavily on the beneficial effect on the team spirit of the men from their association and contact with their superior officers and with each other.

Our senior camp this year was attended by 12 Assistant Supervisors and grazing staff men and by 9 Rangers of long service. The course lasted three weeks and roughly one week each was given to Operation, Forest Management, and Range Management subjects. The established District 3 system was followed of having the men divided into permanent, small squads for training and of having the best qualified men from each of the District Office Branches concerned act as instructors in their lines. An innovation was the attendance (by special request) of men from the Park Service and from the Arizona Extension Service. Visitors from our Washington Office, from Districts 2, 4, and 5, and from other Bureaus were pressed into service for talks and lectures. The District Chief of Public Relations was on the program for one-half day and on two evenings gave "movie" shows which were followed by dances. The Grazing men one evening put on a play featuring range management.

The junior camp was made up of nine men comparatively new in the Service and included Rangers, Assistant Rangers, Junior Foresters and Junior Range Examiners. The work was simpler but spread over a larger field of ranger activity; an effort being made in the three weeks to at least touch on practically all ordinary ranger work. The Director was scheduled to handle the entire teaching job himself, but managed to work in a number of District Office and other Forest Service and Bureau men for at least short courses on their specialities. These men included two from Forest Management, a Range Management man from the District Office, the District Law Officer, the Director of the Southwestern Experiment Station, Mr. Chapline from Washington, Dr. Taylor of the Biological Survey, and Dr. Long of the Bureau of Plant Industry. Perhaps the outstanding entertainment feature of the second camp was the mock trial following a fire actually set and extinguished.

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Twelve States besides New York and the District of Columbia have laws which prohibit the posting of signs or posters upon the front windshields,- the States of Arizona, Connecticut, Idaho, Michigan, Minnesota, North Carolina, North Dakota, Pennsylvania, Vermont, Virginia, Washington, and Wisconsin.

DR. KLEIN TELLS HOW WOOD WASTE HINDERS COMMERCIAL REGROWTH OF FORESTS

In two radio addresses, delivered on February 2 and 9 over 29 stations located in various sections of the country, Dr. Julius Klein, Director of the Bureau of Foreign and Domestic Commerce, placed before the public some of the wastes in wood utilization that indirectly or directly account for the economic difficulties hindering re-planting and re-growing of our forests on a wider scale by those whose main interest in forest products is naturally of a commercial character.

"This waste is not due to any special pleasure that sawmill operators or loggers may derive from 'butchering' trees," Dr. Klein said among other things in his first address. "You and I have been, and are, unknowingly responsible in part for this gigantic waste, because the prevailing wood-using practices make the intelligent conversion of saw-logs extremely difficult, to say the least."

Dr. Klein also called attention to the importance of commercial reforestation. He explained that as a fundamental economic consideration such forestry must be made to pay. On this point he said:

"To supply our mounting demands for wood, we need, very urgently, to grow new timber - but that development has been retarded by the fact that consumers are still using only the choicest parts of the tree and are permitting the rest to go to waste; consequently the tree values remain too low to provide any real stimulus toward effort in this field. We must give the prospective timber-grower an incentive.

"We must make a future, and an alluring future, for the extensive, systematic growing of timber by man. That means utilizing a much larger percentage of the tree - it means finding new economical uses for wood."

In both his talks Dr. Klein called attention to practical ways for eliminating waste in wood utilization. He specially urged the use of short-length, end-matched lumber, the finding of practical uses for what would otherwise become discarded boxes, crates other than using them for fire wood at extravagant costs per ton; the use of plywood and veneers, and the preservation of wood through impregnation. He also told of the extent to which the organized lumber industry has gone in the standardization of its products with a view to protecting the consuming public.

KOTOK SAYS:

"A partial bibliography on tree roots has been assembled by Dunning in connection with the work at this Station. It seems likely that some of the other Stations may be interested in this subject and might be saved considerable tedious labor by having a copy of this bibliography.

"A copy is being sent the Southern Station and another, with a copy of this letter, is being routed to the remaining Stations. There are four or five additional copies which may be had on request."

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A recent news item from Tacoma, "the lumber capital of America", gives what is said to be an authentic case of a fire having been started by the sun's rays shining through a glass fish bowl. Moral for rangers: Keep your gold fish bowls out of the dry forest!

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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FOREST SERVICE
U.S.
DEPARTMENT OF AGRICULTURE

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VOL. XIII NO. 8 WASHINGTON, D. C. FEBRUARY 25, 1929

SECRETARY JARDINE'S RETIREMENT

By R. Y. Stuart

The retirement of W. M. Jardine as Secretary of Agriculture, effective at the close of the present administration, was announced officially on February 13. Secretary Jardine has accepted a position as counsel for the Federated Fruit and Vegetable Growers, a cooperative organization, with headquarters in New York City but with offices in Washington, D. C.

In accepting the position with the federated organization, Secretary Jardine has an understanding that he will give to it only such time as may be necessary for the conduct of its business, thus leaving him free to participate in other agricultural activities. In soliciting his services the Growers' representative told Secretary Jardine: "The Federation has no desire to monopolize your time or your effort. We want you to have unlimited freedom in giving to the cooperative marketing movement as a whole the results of your experience and the benefits of the constructive policies which you have so strongly advocated."

Secretary Jardine will be missed by the Forest Service and his place in our Bureau's history will be cherished by the warm hearts and grateful memories of our personnel. Under his administration many of our progressive policies were advanced and strengthened. He will be remembered particularly for his unfailing attitude of sympathy and liberality toward the underpaid employees of the Department.

TIMBER SALE PUBLIC RELATIONS

By R. J. O'Farrell, Rainier

On October 13, the Buckley school teachers and their friends, 28 in all, made their annual pilgrimage to the logging operations of the Buckley Logging Company. This operation is situated inside the Rainier National Forest, about one-half the output being National Forest timber.

This has become a regular annual event, looked forward to with considerable interest by all concerned. Even the hard-boiled "lumber jacks" spruce up a little for the occasion. These visits are the outgrowth of literature distributed among the Buckley schools during American Forest Week and also the well known hospitality of the Buckley Logging Company.

The entire day was spent at the camp and in the woods. In the woods the successive steps of the logging game and movement of the logs from stump to cars were explained by different members of the company. This was followed up with conversational talks, led by Lumberman O'Farrell, on age of stand, annual tree growth, tree diseases, probable life of the present stand, seed trees, slash burning, and restocking.

These trips show that these teachers are interested in the betterment of their knowledge of the principal industry of their community.

"Chef" Frank Stewart and his able assistant, his wife, did themselves proud in loading up the tables with good things to eat. I doubt if this spread could be duplicated in any hotel or restaurant for less than $3 per plate. The Buckley Logging Company furnished the ingredients for the feast and transportation to and from Buckley.

The story that these teachers came out here to watch the loggers eat is the bunk. As far as I could see they were too busy stowing away food themselves to notice whether a "lumber jack" manipulated his knife or his fork to the better advantage.

While the Buckley Logging Company considers these visits primarily as a neighborly act, they are also interested in improving the fitness of the personnel of their public schools.

Another event of interest during October was the visit to the camp of J. Adam Puffer, nationally known lecturer on child welfare and kindred subjects. He was accompanied by Rev. H. E. Nelson, pastor of the Community Church at Buckley. The object of Dr. Puffer's visit was to gather material of an educational nature regarding conditions in logging camps of the State of Washington, to be published in book form later.

TIMES CHANGE

By L. F. Kneipp, Washington

No one who went through the agonies of the June 11 work and National Forest classification during the first decade of the life of the Forest Service could then have been led to believe that the time would come when the decision of the Forest Service to list a tract of land of appreciable agricultural value but of negligible value for timber production or streamflow protection, not needed for public purposes, nor detrimental to National Forest administration, would provoke wordy telegraphic protests from a local livestock association, a State livestock association, the agricultural agent of a transcontinental railroad, and other sources. Yet that condition has come about.

For the past ten years one G. V. Fear has endeavored to effect the listing of 160 acres of land within the Custer National Forest and adjoining his father's patented homestead. As a result of prolonged consideration the record now demonstrates that the land probably could produce in average years 75 tons of hay and pasturage for a small number of cattle. It can not produce any appreciable quantity of timber, has no marked effect upon streamflow, is not needed for any public purpose, and its private ownership would not seriously affect forest management.

However, neither the Supervisor nor the District Forester felt that the area should be listed, since the only result of such action would be to diminish the Range available to the present resident settlers, dependent upon it for the maintenance of their homes and ranches, to hamper the proper use of the remaining range, and to create one more applicant for the use of grazing resources, already very obviously inadequate to meet the needs of the present settlers. Coupled with this is the fact that on private land within the Forest, and on both private and unreserved land outside, there is abundant opportunity to acquire as good or better farming lands without difficulty or substantial expense.

The Acts of June 11, 1906, of August 10, 1912, and of March 4, 1913, were read and reread singly and collectively. The only conclusion that could be reached was that in circumstances such as are acknowledged to exist their provisions are mandatory and allow the Secretary of Agriculture no discretion to consider economic factors other than those inherent in the land itself. The District Forester, who happens to be in Washington, therefore was advised there appeared to be no alternative except to list the land, and communicated that fact to his office. The ensuing turmoil is quite convincing proof of the existence locally of a conception of land economics and land policies differing quite radically from that which prevailed when the present forest homestead and classification legislation was enacted.

It now seems evident that in many other Forests besides the Custer, economic and industrial development has come into equilibrium with the available natural resources to such a degree that the listing of a few additional areas of National Forest land conceivably may react to the disadvantage of a community, and to the very great detriment of long established individual members thereof, so that the benefits, if any, accruing to the applicants for land may be offset in equal or even much greater degree by the losses sustained by the pioneers who developed the region. The Secretary of Agriculture unquestionably should have discretionary authority to recognize these conditions where they exist, but as the laws stand on the statute books he has none. Whether Congress in recognition of the present situation will be willing to endow him with discretionary powers, or will prefer to continue the present mandatory requirements, is something that only Congress can determine.

"SNOWBOUND!"

By I. M. Varner, Boise

The South Fork of the Boise River is experiencing the most severe and unusual winter it has known for over thirty years. Beginning January 8, freezing weather prevailed, the thermometer going below zero and continuing from 5 to 23 degrees below, reaching this low mark January 21. January 22, light snow began falling and increased the snow depth from 32 to 46 inches during a twelve-hour period. January 23, the thermometer slid down to 33 degrees below. Again January 24, light snow began falling, and during the following sixty hours, 36 inches of new snow fell, and the total depth of 54 inches was reached at 8 A.M., January 26. Then for a change on January 27 -- the sun shone bright for four hours.

People living in the river country shoveled out. Paths were dug. The little town of Pine with its 25 inhabitants resembled a deadlocked battlefield with a network of trenches six feet deep. Snow slid, or was shoveled, from the roofs of buildings and piled up until the eaves of one-story buildings were below the snow level. Holes had to be shoveled so that people could see out of their windows and light could get in. Everyone gave a sigh of relief, but things began to happen again. The loose, fluffy snow decided to move down hill, and snow slides literally by the thousands rushed and roared down the steep walls of the canyons, filling canyon bottoms 25 feet deep, uprooting and carrying away timber, tearing down telephone lines, covering roads, and damming up streams.

The lull in the storm lasted only a few hours. January 28, snow began falling thick and fast, and during the next 48-hour period 34 inches of new snow fell, weighing down the snow already on the ground, and reaching a total depth of 64 inches at 7 P.M., January 29. This added snow, started more snow slides, and they are increasing in number and intensity every hour.

The long, slender trench of a sleigh road from Rocky Bar to Mountain Home, over which the mail comes and goes, was filled with loose snow, covered by hundreds of snow slides, and from Featherville to Rocky Bar the road had to be abandoned and the mail carried by man-pack on snowshoes.

An extra force of men is helping the stage drivers to carry the mail. They shovel through slides only to be confronted by more, and behind them other slides come down and block the road within their view. The mail sleigh-stage has been able to make an average of nine miles per day through the worst of the country, days figured from day-light in the morning to midnight. Out on the prairie country, a 40-mile wind sweeps snow before it, and the slender sleigh track is obliterated twenty minutes after the sleigh has passed. Only horses with exceptional stamina and long experience in the snow are able to feel their way and stay on the road. Once they get off the packed track they flounder almost helplessly until they find the road again.

The one thing that matters most now is to hold the trench of a road, the only line of communication with the world outside, against this smothering snow. There is hope, but it is being strangled with fear.

The snow is so loose that a man traveling with snowshoes sinks down 30 inches. Travel is torturous, almost impossible.

Wild animals, coyotes, rabbits, foxes, and others can not travel to seek food. The deer are unable to travel and can obtain food only by "yarding" and keeping a narrow trail open by constant traveling back and forth, but their food in the winter is scarce, and the shrubs and browse they eat for food are covered up with snow. Death by starvation is almost certain to claim all of them stranded in the high country.

This is no doubt a million dollar snow storm for the irrigated country below. The snow is sliding and packing deep in canyon bottoms and will melt slowly next spring, but all living things up here in the mountains now being smothered with the cold, white snow, would give a million dollars if someone would come and take it.

The end is not yet - more soft, fluffy, white snow-flakes are quietly floating down and joining the uncountable trillions already here.

Clipped from D. 4 Bulletin

Be Specific

Innocent Forest Ranger: "Have you got a pin?"
Exacting Property Custodian: "Common, rolling, belaying, ten, safety, bar, stick, cotter, surveyor's, gage, photographic, taper, hair, hat, wrist, beauty, scarf, tie or fraternity?
-District 6.

STANDARDIZATION OF COMMON NAMES OF RANGE PLANTS

By C. S. Robinson, Lassen

The bewildering collection of common names given to our field specimens makes it necessary that in order to be proficient in the art of "spotting species" by their common names one must have spent considerable time in each and every county within the District.

Reasons for the usage of common names have been well set forth by members of the Service from time to time, but how best this may be accomplished is a problem almost as difficult as is the task of deciding the common name most suitable for each individual plant. The late Mr. Sudworth's manual of common names of tree species supplied a long felt need, and his contribution a relief for timbermen and foresters in general. That a similar manual for Grasses, Weeds, and Browse species is badly needed is only too well known to warrant further comment. The undertaking of such work, however, is a big task in view of the large number of range plants.

Let this be understood before we go on any further - there is no shortcut to systematic botany. The classification of plant families is based upon knowledge of reproductive structure, and actual relationship. Segregation is impossible without proper understanding. These facts are self-evident, and we cannot throw out any part without discarding the entire status.

We are faced with two distinct opposing factors (1) botanical names and terminology are proven and accepted all over the world - it is a universal language, and (2) common names are intimately associated with our everyday life and work, and the relative knowledge is based upon familiarity with local conditions and surroundings. It is obvious that we cannot discard the former, and equally so is the impossibility of ignoring the latter. To be frank, there is no common ground for common names among us; Skunk Cabbage in Kern County is False Hellebore in Siskiyou; Buck Brush on the Cleveland may be Snow Brush on the Lassen; and so on ad infinitum.

A suggestion for a start at standardization might be worked out along the following lines. (1) Collect for each plant the common names given on each Forest within the District, and list them accordingly under the botanical name of the plant in question. (2) Reduce to two or one common names having the widest range geographically. (3) Publish in convenient form arranged in alphabetical order for distribution to all Forest officers, Forest users, and schools within the District.

The task of collecting the material would not be so great as might be imagined. Forest officers could supply an immense amount of information, Botanical publications covering the Pacific Coast States contain a surprising number of common names, and a direct appeal to individuals having a keen interest in wild flowers and plants, with information solicited from local stockmen and others, should provide sufficient material from which a start could be made.

LET US NOT BE COMPLACENT

Why has motor-making become a three-billion industry in so short a time? For many reasons, but especially one: The type of men engaged in developing it.

Motor executives, more than any other group I know, look upon their work as a thrilling adventure. They are engrossed in what they are doing, always they are eagerly striving to accomplish something new, something better, something bigger. They never are content to let well enough alone. Good enough is not good enough for the giants of the United States, who have supplied the world with three-fourths of all its automobiles.

President A. P. Sloan, of General Motors, asks himself, and urges each one of his co-executives to ask himself every day, "Is there not some better way of doing this?" - From B. C. Forbes's Financial Notes.

YE EDITOR DISCOVERS

Speaking of swivel chairs - our Chief's is getting dusty and of late it groans when used. Here is his 1928 inspection record. The Forest Service field force (including Forest Experiment and Range Experiment Stations and Forest Products Laboratory) comprises 1856 individuals. The Forester saw 328 individuals:

Forest Experiment Stations	18	of total of	72
Range Experiment Stations	3	"	7
Forest Products Laboratory	*22	"	84
District 1	47	"	323
District 2	38	"	247
District 3	39	"	183
District 4	62	"	233
District 5	50	"	224
District 6	40	"	300
District 7		"	153
District 8		"	27

*incomplete

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The Secretary has appointed a forest research council for the Allegheny region. This council is composed of a number of individuals representing the public who are interested in forestry and the use of wood in the Allegheny region. The council includes the State Foresters of Maryland, New Jersey, and Pennsylvania, Professor Ferguson of the Pennsylvania State College, Dr. Livingston of Johns Hopkins, Dr. Jennings of the Carnegie Institute of Technology at Pittsburgh, and, among others, Mr. P. S. Collins of the Curtis Publishing Company.

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On the initiative of Dr. A. F. Woods, Director of Scientific Work for the Department of Agriculture, a meeting was held on the night of February 13 in the Press Club building to discuss the pending Lehlbach Bill and other matters of interest to scientific and technical employees of the Department of Agriculture. A good deal of dissatisfaction was expressed over the clause in the Lehlbach Bill which grants to the Personnel Classification Board sole jurisdiction to determine the grade to which employees shall be allocated. Discussion brought out the fact that the board now has this authority under the Classification Act of 1923 and that some correlating agency, not necessarily the Personnel Classification Board, is indispensable if equity and a reasonable degree of uniformity are to be had in the salary structures and grade allocations of different Departments.

The meeting led to the adoption of a definite program looking to the reorganization of the old scientific and technical section of the Federation of Federal Employees, which was a flourishing and fruitful institution in the Department under the leadership of Dr. Rodney H. True, who left the Department service a number of years ago. A group representing the technical and scientific employees in all Bureaus in the Department will be brought together to work with Luther C. Steward, President of the Federation of Federal Employees and Dr. Meyer of the Bureau of Standards, who for many years has been an important leader in the field of personnel management and personnel legislation. It is quite possible that an organization of the scientific and technical employees in the Department will be developed which will facilitate discussion and clarification of ideas on questions of personnel management and personnel legislation, and which, because of its affilia ion with the Federation of Federal Employees, will be able readily to exert an important and constructive influence.

Dr. W. P. Taylor of the Biological Survey, who is a member of the national council of the Federation of Federal Employees, is in Washington and has contributed liberally of the energy and enthusiasm which he brings from Arizona and the local employee organization in that region.

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The genial Mr. Raphael Zon, Director of the Lake States Forest Experiment Station visited Washington for about ten days while he was in the East. He has just returned to his station from a trip made through the Northeastern States, where he visited a number of the Forest Schools. The main purpose of the trip was a series of lectures given in the Massachusetts Agricultural College at the invitation of President Thatcher.

A LETTER FROM DR. SCHENCK

Dear Mr. Munns:

Many thanks for your kind Christmas gift sent on December 17th and consisting of half pound of Douglas fir seed collected in the Lincoln National Forest.

You may remember that, some 25 years ago, the Forest Service has sent samples of seeds collected in the various National Forests (in those days "Forest Reserves") to Professor Schwappach for experimental planting. Some of them were planted in the Palatinate (west of Heidelberg). Next to the seeds coming from the coasts, those coming from the National Forest in New Mexico were proving best. For that reason I am particularly grateful for the chance of repeating the experiment then made with seed from the Lincoln.

I am sending part of the seeds to my friends at the various European Forest Experiment Stations, notably:

the Swiss Forest Experiment Station,
the Finnish " " "
the Saxon " " "
the Prussian " " "
the Bavarian " " "

I am spending this winter in Germany, deeply engaged in concocting a book on "Foreign (American) Trees Fit for Planting in Europe". For each species I am trying to analyze the climate of its native home. With that idea I have asked some 60 weather observers in the West to send me twigs with buds of the trees found within 100 yards of the weather station. It looks to me as if your office might do this stunt to good and to perpetual advantage on a very large scale. The forest is disappearing from the proximity of the weather stations when the villages are growing, and it will be difficult 50 years from now to say for a certainty what species there were growing in the immediate proximity of the weather stations. The time to collect data of this character is now! By these means, our successors will be able to do what we are unable to do ourselves: to establish some exact climatological records for the tree species of the U. S. A. Heretofore we have tried to establish the meteorological records for the woods. Let us reverse matters and let us establish the woods (tree species) for given meteorological stations!

With kind regards for R. Y. Stuart,

Very sincerely yours,

/s/ C. A. SCHENCK.

VISIBILITY MAPS

By W. H. Bolles, Idaho

It has been the practice to have each Ranger make visibility maps for the lookout points in his district. This is undoubtedly the cheapest way to get this work done. The results, however, are questionable. It stands to reason that when such work is done by men who have had little or no experience in mapping and who's equipment is limited to a map and colored crayons, that the results must be very general. Furthermore, the Ranger is frequently unfamiliar with the territory outside of his own district, which is a decided handicap, especially when endeavoring to differentiate between blind and indirect control. While it would be entirely possible to carry the standards of accuracy for such work beyond all practical purpose, I am inclined to believe that some of our present maps are so general in character as to be of little value.

I had always supposed that making visibility maps was a simple matter until experience convinced me how inaccurate such work must be with the equipment generally used. It was impossible to get more than approximate orientation and when using a one-half inch map glaring errors can easily be made. The use of a plane-table, alidade, etc.,would permit exact orientation, the location of minor landmarks, and would greatly increase the accuracy of the work. The physical impossibility to definitely distinguish between blind and indirect control is another source of error.

The only way to secure reasonably accurate and uniformly consistent visibility maps is to adopt more definite standards and have the work done by an experienced mapper. This could be handled by engineering or, if time permitted, the assistant supervisor, or anyone else qualified could make all the maps for a Forest.

Two questions come to mind: (1) Are the present visibility maps accurate enough for our purpose? (2) Is it worth while to strive for further refinement?

NEW METHODS OF PASTURE MANAGEMENT IN ENGLAND

By W. R. Chapline, Washington

An article under the above title by Dr. J. G. Lipman, Director of the New Jersey Agricultural Experiment Station, in the Pennsylvania Farmer for November 24, discusses the investigations of grasslands especially in the British Isles. It is interesting to note that certain of these investigations are carried along lines toward which our range research in the Forest Service is tending. He states:

"Starting with the assumption that the carrying capacity of pasture land may be increased where water is not the limiting factor, the studies now in progress in western Europe are making a critical analysis of all the important factors that influence carrying capacity. These factors include soil texture and structure, the type of herbage, the density of the animal population per given area, the frequency of grazing of any given area, the use of lime and fertilizers and the use of harrows, disks, and other tools and implements. Since different soils vary in their natural fertility they must also vary in their ability to produce animal food. Some grasses are more nutritious than others. Some can stand close grazing much better than others. Some are adapted to acid, others to neutral or alkaline soil conditions.

"Interesting investigations are now being carried on by Prof. Stapledon in Wales on the improvement of pasture grasses by breeding and selection. Others like Prof. Wood of the University of Cambridge are studying the influence of frequent cutting or grazing on the composiion and yield of forage."

There is little chance for the use of fertilizers or cultural implements for improving vegetation on our native range lands under their present values. The other four factors, however, listed by Dr. Lipman are being given very careful consideration in our research work. Doubtless the soil factors which Dr. Lipman places first will deserve more attention in our future studies. In addition to the factors which Dr. Lipman lists, we are giving considerable attention to the ecological factors and processes which influence our native vegetation.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 9 WASHINGTON, D. C. MARCH 4, 1929.

OUR MILESTONE NUMBER

In brief, we show in the various articles that follow what the Forest Service has accomplished during the past year.

RESEARCH

By E. H. Clapp

The outstanding event of the year in research, while not in the nature of an accomplishment, was the passage by Congress of an enabling act known as the McSweeney-McNary law. This law is of vital importance in its recognition of forest research if it accomplishes nothing else. To what extent it will insure sustained and regular increases in the resources for forest research still remains to be seen. The first year's increases carried by the Agricultural appropriation bill recently approved by the President may or may not be an indication. Actually, however, for the Forest Service alone the increases are more than twice the maximum for any previous year in the history of the Forest Service. Other things of significance are: the appropriation for forest products research moved substantially upward for the first time in several years; one of the first enlargements of an existing Forest Experiment Station was obtained; the first substantial increase in range research in 15 years was granted; an initial appropriation was made for a forest survey, attempts for which have been repeated over a period of more than 20 years; and an initial appropriation was made for a study of the financial aspects of forestry, attempts to obtain which have continued over a period of more than 10 years.

Progress particularly worthy of mention in the work of the Forest Experiment Stations includes the collection of an enormous volume of data for normal yield tables of upland oak stands for the Appalachian and surrounding territory and the completion of volume tables for six important oaks. It includes work showing an influence by forest litter in flood and erosion control far exceeding in significance and importance anything previously shown or anticipated. It includes a showing of damage by fire in southern lowland hardwood stands far more serious than anything previously expected. It includes a large amount of work on northern swamps which when completed may have a vital significance in the forest and agricultural economy of such regions as the Lake States. It includes such things also as a classification of forest trees as a basis for National Forest silviculture in California having behind it records for each class of 20 years on growth, seed production, susceptibility to windthrow and insect damage, etc., for several thousand trees.

Range research brought well towards completion 15 years of research on the function of western grasslands in the control of erosion. On two southwestern range reserves the striking advantages of conservative stocking over excessive use of the range were almost conclusively demonstrated.

The Forest Products Laboratory among other things made substantial progress on work which should result eventually in practical moisture content grades for lumber which at the same time will meet satisfactorily the requirements of different classes of use. Very significant progress was made on the minute structure of wood cells and of the chemistry of such woods as redwood. Strong white pulps were developed from southern pines, and new or modified chemical methods were also developed for making pulps from various eastern and southern hardwoods. Fire was shown to reduce the production of naval stores from injured trees by 50 per cent, and to kill an additional large percentage of the stand. Woods and mill scale studies by the Forest Products Laboratory and by other products units were carried through important stages in several forest regions, showing the dividing line as to tree diameters between profitable and unprofitable handling and obtaining other significant information bearing upon the practice of forestry on the one hand and utilization upon the other.

The Forest Taxation Inquiry, designed for a number of years to be a fact-finding study only, substantially completed its work in the Lake States and initiated similar work in the Pacific Northwest and on a relatively small scale in New England.

In a statement such as this there can be the barest reference only to lines of work in which substantial progress or important findings have been made, but much more detailed statements can be found about most of these lines of work in the Forester's last annual report.

FOREST MANAGEMENT

By E. E. Carter

The outstanding accomplishments in Forest Management activities during the calendar year 1928 are as follows:

1. Fires on timber sale logging operations were relatively few in number and covered only small areas. This is the result of four years of effort to get into full effect the fire prevention code, drawn up in the winter of 1924-25, and which could not be incorporated in some long-term contracts executed before 1925 until 1928. Logging fires occurred on timber sales during the year, but they were usually directly traceable to negligence or stupidity on the part of some man or men. For example, a 70-acre fire on a California timber sale resulted from the effort of a youthful tractor driver to find out how rough ground or how big logs his tractor could be forced to surmount, with the result that the tractor burst into flames and the high wind which was blowing carried them beyond immediate control. In general, however, the year was notable for the small number of logging operation fires and the small acreage burned in fires caused by logging under National Forest timber sale contracts.

2. Distinct progress was made in correlating desirable silvicultural practices with the necessities of logging, especially in the use of modern machinery. Specifically, the tractor is rapidly replacing the donkey engine as a means of skidding or moving logs from the stump to the railroad in the pine regions of California, Oregon, and other States. New

and better standards of what constitute satisfactory conditions on timber sale areas with tractor skidding were established, particularly in California, and means devised by which these standards can be attained in practice.

3. The unsatisfactory condition on the Malheur National Forest, due to the failure of the former contractor to operate as required by the terms of his contract, was cured by the resale of the timber after public advertisement to a capable and financially strong operator. The purpose of the Service to make the timber resource contribute to the maintenance of the community adjacent to the Forest is thereby being accomplished. A large sale on the Tusayan National Forest in Arizona, made during the year, will maintain an already established industry, which is the chief business of an important town in the region, as well as produce revenue for the Federal Treasury and for the county and change a mature and overmature forest into one in which growing timber will predominate.

4. Another large sale was made on the White Mountain National Forest in New Hampshire, being the first of major size on that Forest. The product of this sale will be chiefly pulpwood, but sawlogs of the hardwoods are also included. This sale is to run for 15 years and during that period will produce revenue amounting to at least one million dollars.

5. The bulletin on the pulp timber resources of southeastern Alaska, by Mr. B. F. Heintzleman, was completed and at the end of the year was in page proof. Delivery of the pamphlet is expected daily. This publication represents the continuation of the efforts of the Service to develop a pulp and paper industry in Alaska, and furnishes data in printed form on the timber as a companion bulletin to Mr. Dort's publication on the water powers of southeastern Alaska, issued by the Federal Water Power Commission three years ago.

6. Although definite figures will not be available before March, I am confident that more acres were planted on the National Forests during the calendar year 1928 than in any other year. This was due principally to an increase in the acreage planted in the Lake States, particularly on the Huron National Forest. The year was also notable for the establishment of the new nursery at Parsons, W. Va., which will place administrative planting on the eastern National Forests on a firm foundation.

7. A destructive insect infestation in the western yellow pine type on the Colorado National Forest was effectively controlled by the continuation, in 1928, of work begun in 1927. In California arrangements were made to combat an extremely bad insect infestation on both National Forest and intermingled private timberlands through the sale of National Forest timber under conditions which require the purchaser to treat or remove the infested trees on 15,000 acres during the present winter and spring and, if the infestation continues, on 30,000 acres annually thereafter. Incidentally, the timber sale will salvage large quantities of insect-killed timber before checking and rot make it useless for lumber manufacture.

8. The fact that the timber sale business was maintained during the year, and probably even slightly increased, is really quite an accomplishment, but probably has no news value. With conditions in the lumber industry no better than they were, it is rather remarkable that the National Forest cut has not decreased sharply. There are several other things which might be mentioned, such as the beginnings of pulpwood shipments from Colorado to the Lake States, but publicity in regard to them is not desirable at this time, in view of the experimental character of the effort or our relations to the operators.

OPERATION

By Roy Headley

In the fields of administration, executive management, and organization long strides have been taken by the Forest Service during the year of 1928.

The scientific method is said to have been complete, as a method, in the writings of Galileo and has been a familiar discipline for centuries in the various branches of physical science, but the conscious application of the method to administrative problems is not more than a few decades old. It is going strong now in business and industry and the Forest Service has no apology to make for its development along this line. During the year the analysis of objectives, functions, methods, time requirements, etc., on our smallest administrative unit, the Ranger district, has moved ahead with vigor and confidence. A good start has been made on analysis of the Supervisor's job and the technique of planning for the most effective functioning by the manager of a National Forest. The surge of interest and activity on this last problem is such that there is some danger we may go too fast and fall into the pit of superficiality which has brought so many promising movements to an inglorious end.

At the Washington office end, analysis and overhauling of functions, uses of time, etc., have also been a live issue, and when the tumult and shouting are over, history will no doubt credit sizeable concrete accomplishments to 1928.

The accounting course of the winter of 1928 with its follow-up has forced most of us to think along unfamiliar and sometimes unwelcome lines. Time alone can tell the gain we have made in our understanding of our financial problems, but, at the very least, the old year can claim credit for a conscious, Service-wide attack on one of our major problems.

During the year, training experts met at Fort Valley, matched ideas, and formulated a statement of principles which should give illumination for some years to our efforts to evolve just the forms and amount of training which the Forest Service requires.

Taking the Service as a whole, the year has witnessed some notable gains in the control of standards and costs of forest improvements by the actual uses and use values to be obtained therefrom. High standards for the sake of high standards is losing its grip.

While our fire record is still nothing to write home about we can at least claim "progress", as shown by the following table.

AREA LOST BY FIRE IN THE NATIONAL FORESTS

Period	Average Gross Area (acres)	Area Burned Over 5-Year Period (acres)	Annual Average (acres)	Annual Percent of Gross Area
Cal. Year 1910-1914	188,576,733	7,113,720	1,422,744	.75
" " 1915-1919	177,430,345	5,321,995	1,064,399	.60
" " 1920-1924	181,767,439	2,662,173	532,435	.29
" " 1925-1928	184,147,947	*1,978,085	494,521	.27

* 4 year period, 1928 figures incomplete
Each one of these periods includes a "bad" year.
The figures are fair and they speak for themselves
as to losses on the National Forests.

During the year, field classification and salary adjustments proved an insatiable time eater. It led to new high levels of salaries present and prospective and resulted in the accumulation of records, ideas, plans for the future, etc., which will surely pay high dividends in benefits to the public service.

A fresh view was taken of fire control to determine what things most need systematic study in order to enable fire executives to meet their responsibilities. District Foresters and their associates gave a lot of hard study to the subject and whatever the tangible results of the survey may be, some better understanding of our fire troubles is sure to result.

LANDS

By L. F. Kneipp

In Lands, the high spot of the year 1928 was in connection with Acquisition work under the Clarke-McNary Law. Early in the year the National Forest Reservation Commission approved a comprehensive future program of National Forest land purchases, totalling 9,600,000 acres; thus establishing a definite basis for future planning and administrative action. Later, the Woodruff-McNary law, approved April 30, 1928, was enacted, thus establishing a definite fiscal policy for the ensuing three years. Finally, the Commission gave specific approval to the establishment of seven new purchase areas in the Lake States, three in Louisiana, and two in eastern South Carolina, thus initiating the actual application of the policy of forest land purchases primarily for timber production and demonstration of sound forest practice, in contradistinction to the early policy of purchases primarily for the protection of navigation.

Another high point was the opinion of the Attorney General in the Northern Pacific Railroad Grant case, substantially confirming the position of the Forest Service.

Another distinctly forward step was the enactment by Congress of a law withdrawing the greater part of the lands within the Angeles National Forest from entry under the mining laws; thus putting an end to a gross misuse and abuse of the mining laws within that Forest.

Progress was made in placing under management and protection additional areas of unreserved and unappropriated public domain, to wit: Missoula National Forest 220,000 acres; Montezuma, 17,500 acres; Idaho Forest, 46,000 acres; Challis and Sawtooth, 26,480 acres; Challis, 54,000 acres; Gunnison, 6,120 acres. An addition of 27,840 acres also was made to the Crater Forest, but of this only 6,040 acres is publicly owned and that is O.& C. revested land for which the appraised value must be paid from National Forest receipts. However, the addition establishes an important precedent in that it may demonstrate the practicability of giving a National Forest status to over 400,000 acres of O. & C. land, now within National Forest boundaries and almost inseparably intermingled with National Forest lands.

Extension of the provisions of the General Exchange Act to all Spanish or Mexican land grants contiguous to National Forests in New Mexico; and to all lands within six miles of the boundaries of the Crater Forest, marked another important step in the betterment of the National Forests through consolidation and extension.

The land exchange work progressed smoothly and satisfactorily throughout the year. The cases approved by the Secretary in 1928 contemplated the reconveyance of 262,480 acres of land and the selection of 22,140 acres; the remainder of the selection value consisting of stumpage. If all these cases are consummated there will be a net increase of 240,340 acres in National Forest area. The acreage actually reconveyed in consummated cases during the year was 126,245 acres, that selected, 32,800 acres; so that the actual net gain in National Forest area was 93,445 acres. Some of the consummated acreage is included in the approved acreage, as the exchanges were both approved and consummated within the year.

ENGINEERING

By T. W. Norcross

Judging the calendar year 1928 accomplishments by the mileage of roads constructed and maintained, decided progress was made. Data for the year are not available but in all probability the accomplishments will equal, if not exceed, those for the fiscal year 1928 when 1255 miles of road were constructed or bettered and 13,773 miles were maintained. The unit cost of construction or betterment was $1,447 per mile which compares very favorably with previous years. The work was handled much more efficiently and easily, both in the field and in Washington, due to the Congressional change in legislative policy. For the preceding year it was necessary to keep expenditures within a specified amount. This year that requirement did not hold. The apportionments to a State now constitute the maximum allowable expenditure.

The objective in the minor road work is to provide the road which at the least annual cost will render the required service and to construct and maintain the required road at the lowest possible cost. Decided progress towards the objective was made during the year. In the planning work not only the mileage of roads and trails but the standards now vary greatly between Districts and there is decided need for coordination. This is one of the objectives of the planning method first applied to the Florida Forest. Much work was done on this method during the year and many improvements made. The practicability and value of the method was thoroughly established and work has been started in several Districts.

Except for utilization roads, the service required by a road is measured in terms of elapsed time. Data earlier gathered in the field and showing the effect of curvature were worked up and the speed for various combinations of width, radius, and banking were determined. Field investigation was made to determine the effect of up and down gradient and of width on the speed of travel. It is believed that sufficient data have been secured so that conclusions may be drawn. As a result of all the investigative work, data will probably be available to permit the preparation of tentative specifications for designing roads for certain specified speeds.

Decided progress was made in the field in determining better methods of doing construction work and in using equipment which previously had not been thought practicable. The result as compared to earlier years is a better road for the same expenditure or a decreased cost for the same standard of road. The work of this character done in all Districts, but especially District 6, was excellent. District 5 continued with its use of heavy tractors and heavy graders in building low standard roads, improved its method, and decreased its cost decidedly.

For first line defense against fire, a road at times will give the required service at less expense than a trail. At other times the trail is the better investment. A method has been evolved which makes possible determination simply by the use of graphs and tabulations. Certain changes of course may have to be made to meet specific conditions but the application of this method for general conditions should be both practicable and result in decidedly better use of available money.

Road signs for the Forest roads have now been standardized with a few exceptions.

These signs are so related to the standard sign for the U. S. Highways that the traveler will not be confused. On the other hand, the signs have been adapted to meet peculiarly Forest conditions and to give the Forest Service credit for the signing work which it does. A sign manual is proposed but preparation cannot yet be started.

District 1 has continued its excellent work in determining the practicability of the airplane survey method for Forest mapping and for photographs of the Forest land. Many improvements in this method were made and decided value should be secured from the work. Engineering's participation in this was restricted very largely to the working up of the photographs into a map. This required much original work.

Topographic and other surveying has been continued in four Districts and while decided progress was made, the needs are not being met. The General Land Office has assisted decidedly in giving us the maps and surveys that we desire but the progress made by the Geological Survey in the work is very disappointing and decidedly unsatisfactory. The difficulty is the lack of appropriations. The urgent Forest needs are far from being met.

The work done by Mr. Bonner in his bulletin on Water Powers of California is probably one of the greatest contributions to water power development in the United States but particularly in the National Forests that has ever been made. Much of this work was done on his own time. Not only has decided aid been given to existing and prospective developers and to the general public, but, with the report available, the cost of certain Forest Service work in the future will be simplified.

The amount of water power work for the Federal Power Commission still continues heavy in California, is increasing in District 6, and is holding about the same as earlier for the other Districts. Cooperation with the Federal Power Commission has continued excellent. Work on Forest Service cases has required considerable time, several revocations or extensions of time being made and several complicated cases handled. A policy was worked out to coordinate roads and water power and also a difficult adjustment between a railroad, Forest and water power use was made.

RANGE MANAGEMENT

By C. E. Rachford

The question - What are the outstanding accomplishments in Range Management during the past year - should be answered by a citation of facts and figures. Frankness compels the admission that we do not have the information available at this writing, since most of the data upon which we could base a conclusion have not been received from the field.

The recognition accorded Range Management in 1928 in the various administrative plans developed, analyses made, etc., gave it a permanent and rightful place in administration. It is no longer the orphan in Forest administration but occupies a dignified position among our activities. In line with according Range Management the proper place in administration, special attention was given to a more careful analysis of the problems involved and adjustment in carrying capacity estimates and allowances were made. It may be said that the program of adjustments completed last year established authorizations on a fairly permanent and stable basis. We still have some overstocking on important watersheds, and localized overgrazing and the necessity to reduce numbers in order to provide for special conditions and interests will continue to arise.

Much of the success in range management during the past year has been due to a better knowledge of forage requirements. Progress in obtaining this knowledge through a close study of experimental enclosures, quadrats, observation stations, etc., has been most noteworthy during 1928. A better understanding of the science of range management has been secured.

As in the past, progress in range management is largely dependent upon our ability to correlate the needs of the forage, livestock industry, and related interests or resources. These needs are recognized in the range management plans which have been developed during the past year. I wish that definite statistics were available to support my belief that of 3000 ranges or more on the National Forests, more than 70 per cent has been covered by range management plans. I hope to be able to show when the figures are available that not only is this estimate conservative, but that the plans are actually applied on a majority of ranges for which they have been developed.

The year 1928 has emphasized the fact that the same intelligence in the stocking of ranges with game animals should be exercised as in the stocking of ranges with domestic livestock. The urgent need for a reliable method of determining numbers and an estimate of capacity is most apparent. It is just one of many administrative studies in range management which impels thoughtful consideration and makes the work more interesting.

Final settlement of the range appraisal question was one of the outstanding accomplishment in Range Management in 1928. The Secretary of Agriculture has approved the recommendations of the Forest Service in the only appeal taken to his office. The settlement of this question leaves the way open for more constructive work.

A larger number of range improvements were constructed in 1928 than during any other year since the creation of the National Forests. Conflicts between grazing, game, recreation and other interests have been adjusted without serious complaints or appeals.

Decentralization of work, resulting in the placing of more responsibility on the field organization, has materially reduced the number of appeals to the Washington office.

Range reconnaissance has been simplified and placed on a good sound business-like basis.

Cooperation with local livestock associations, game organizations and commissions has been greatly improved.

With close studies of range conditions comes the realization of opportunity for better work. While the results in 1928 were encouraging, 1929 completes the first half of the 10-year permit period and it is hoped will be the banner year in Range Management accomplishments.

PUBLIC RELATIONS

By Ward Shepard

The Branch is still in the process of "finding itself," of coordinating its activities, and of directing them into the most promising channels. Consequently, though there has been steady progress in the development of State cooperation and of educational methods and materials, as well as in more effective Branch organization, much of the work of the past year has been the unspectacular job of discussion and clarification of ideas and objectives.

Fairly general agreement has been reached on these principles:

(1) The larger, though by no means the sole, job of the Branch is outside the existing National Forests. The National Forest PR job, however, remains an important one.

(2) The work of the two Divisions, though differing in detail, is directed to the same end - forestry extension, - and is, therefore, logically joined together.

(3) The execution of PR work should be decentralized as far as possible.

(4) PR work should be developed more systematically on the project basis.

What is necessary in the way of organization and financial support for carrying on the work is not yet clear and probably will only become clear as the work progresses.

In the National Forest Districts there has been a healthy growth of PR activities. Among the important developments are the increasing participation of the field force as a whole in PR work, the extension of local fire campaigns, and the development of "show me" activities for key men.

Division of Information

Considerable time and effort of the Division of Information during the past year have been devoted to assisting in the formulation of the proposed public forestry inquiry by means of a Federal Commission, previously mentioned in the Bulletin. A proposal for such a Commission, including a "six-point" program, has been worked out, approved by the Secretary, and transmitted to the Hoover Committee on Recent Economic Changes. The purpose of this plan is to obtain adequate recognition of the place of the forest problem in the Nation's economic structure, to assist in stabilizing the forest industries, to extend the cooperative forestry program by a more determined effort to abolish forest destruction, to consider the feasibility of public requirements to that end, to complete the cooperative fire protection plan, to greatly extend public forest ownership, and to make the public forests more fully productive, especially through more adequate fire protection and a larger planting program.

There are still important hurdles to be leaped before the inquiry is assured; but assuming it is made, it might well be the means of giving new impetus to forestry.

During the year much effort has been spent on problems of internal organization and of adjustment of the educational work to the Clarke-McNary Cooperative Program. A detailed analysis of objectives and methods of Forest Service educational work was made, and supplemented by discussions in numerous Branch conferences.

Mr. Peters personally gave much thought to the better coordination of the work of the two Divisions. To this end, he planned to have the Clarke-McNary Inspectors take a larger part in educational work and to spend a good deal of time in helping the States to develop their own educational programs. This is in line with the general movement to reduce the "retail" work of the Branch through decentralization of detailed educational activities.

Progress has been made in working out methods and materials for reaching landowners with usable information on better forest practice, as will be noted in the following discussion of some of the educational work of the Branch.

The year was a particularly active one in motion pictures, under Mr. Kylie's direct supervision. The films "Forest and Health," "Forest and Wealth," "That Brush Fire," and "Forest Fires" were released early in the year. Scenes were made for a film on "Selective Logging" in the Lake States; "New Woods for Old," a film on handling farm woodlands in the Southern Appalachians; "On a Thousand Hills," a District 4 grazing picture, chiefly on sheep range management; and "Green Pastures," a District 3 grazing film, principally on cattle range management. In addition, District 5 made a three-reel film, "What Price Fire," and District 1 made a one-reel film on "Slash Disposal in Northern Idaho" as a means of bringing public support to the Idaho forestry law. A preliminary draft of a scenario for a three-reel film to replace "Trees of Righteousness" has been made, and general plans were made for a two-reel film on forest destruction as an economic and social problem.

Under the supervision of Mr. Hutchinson, of District 5, the photograph collection was overhauled and 27,000 photographs discarded. He also devised a new filing system, which will be put into effect as soon as the necessary help can be obtained. Progress has been made in obtaining fine series of activity photographs by providing Mr. Snipp with carefully planned "scenarios," for his trips in Districts 2 and 3.

A series of radio programs, principally on the handling of farm woodlands and better utilization of farm timber, have been sent out, under Mr. Randall's direction, over 139 stations which cover the entire country with the Department programs and reach approximately five million farmers.

By relieving Mr. Everard of research editing, the Branch is now in position to devote more effort to popularizing forestry methods among landowners by leaflets and similar material. During the past year, progress has been made in this plan by increasing material of this type in the Forest Worker, by extending its circulation, and by the preparation of several popular leaflets.

Division of State Cooperation

Four special projects of general interest and significance engaged in by the Division of State Cooperation during the calendar year 1928 are as follows:

1. The Mandan Conference was a meeting of twenty-four men engaged in dry land forest planting and especially in Clarke-McNary Law cooperation from Colorado, Kansas, Wyoming, Nebraska, Montana, and North Dakota. South Dakota and Canada were also represented. The meeting was initiated by the Washington Office and successfully carried through by District 2 working with State Forester Cobb of North Dakota and Mr. Wilson, in charge of tree planting at the Mandan Station. Its purpose was to standardize cooperative distribution of forest planting stock. The results of the conference are indicated by resolutions passed aiming at: 1. Definite objective, such as a windbreak for each farm and such woodlots as needed; 2. Optional production by State or commercial nurserymen with view to harmonious relations; 3. Prior agreements between recipient of trees and State as to cultural methods; 4. Inspection prior to distribution and after planting; and 5. Close cooperation between State forestry agencies.

The Proceedings of the Conference have been mimeographed and a small number of copies are still available for distribution.

2. The Development of Cooperative Fire Protective Associations in the South. The forest protective association in the South is one of the most significant recent developments in forestry. The projects in Florida and Mississippi are striking examples of joint planning by the Government, the State, and the private owner in organizing for the protection of private lands with real participation by the three parties. The principal accomplishment along this line has been the establishment of a policy of State supervision with the blocking out of natural protection units of such size as will permit economical and effective handling in several rather than single ownerships. Conditions are of course very different in different States and there is a decided limit to which standardization should be carried. The main principles are now, generally speaking, agreed upon, and practice is being satisfactorily shaped in conformity with these principles.

3. Revision of the Scheme of Allotting and Reimbursing Clarke-McNary Funds to the States. This has resulted in making it possible to notify the States concerning their allotments for the ensuing fiscal year at a much earlier date and with greater certainty than heretofore, and the revised plan of reimbursement has met with hearty commendation from all quarters.

4. Development of State Programs. An initial step has been taken looking toward this development, namely, a canvass of the significant statements on State forestry policy for each State in the East through the District Inspectors. Every opportunity has been

taken to emphasize the desirability of formation of State forestry policies and programs and in certain cases, such as Louisiana and Virginia, statements of policy have been written jointly by the State and Federal men.

South Carolina, Delaware, Illinois, Indiana, West Virginia, Georgia, and Florida initiated cooperation either in fire protection or distribution of trees during the year. The accomplishment in Florida is worthy of note because of the close cooperation of the State Forester and District Inspector in the formulation of plans and of a forestry policy for the State which were presented to the State Forestry Board and adopted. This instance represents an outstanding case where it was possible for the Federal Government to have a representative on the ground at the beginning who could be of direct assistance in initiating the work. Plans for South Carolina and for West Virginia have been developed in a similar manner.

YE EDITOR DISCOVERS

The flood report, prepared under the direction of Mr. Sherman and submitted to the President through the Secretary of Agriculture on February 9, has been presented to the Senate and the House of Representatives through the Vice President and the Speaker, respectively, and has been ordered printed.

This report was prepared in response to a request from the President based upon the clause in the Flood Control Act in which Congress directed the President to call upon the Secretary for additional information as to the effect that the forests have upon floods. A number of investigations were made by the Forest Experiment Stations as to the amount of water absorbed and held by the forest litter. This was supplemented by other data from many sources as to the effect of forests in increasing the water holding capacity of the soil and the approximate amount of water absorbed by the trees from the soil during late winter and the early growing season when floods are much in progress. The net result indicated that the forests of the Mississippi as they are at present constituted are responsible for approximately 1.65 inches of water in depth over certain portions of the watershed, which under a full forest and with adequate forest management would come up to 5 inches. Translated in terms of flood height on the Mississippi, in accordance with General Jadwin's data, the forests as at present constituted are responsible for reducing the height of the flood crest some 15 inches, which under full forestry practice could be increased to some 55 inches. This would indicate, on the basis of the Army Engineers' statement, a storage capacity equivalent to 1½ reservoirs, which under full forestry practice could be increased to 4.6 reservoirs.

The report as it went to the President has some 1500 pages, including about 75 pages of text prepared under Mr. Sherman's direction. Reports of the Individual drainage basins prepared by Zon, Demmon, McCarthy, Ash, and Wolf - an appendix which constituted by far the bulk of the paper - describe conditions in each of the individual drainage watersheds throughout the entire Mississippi Valley.

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The establishment of the headquarters of District No. 9 has been approved by the Forester, and the new District will center in Milwaukee. In addition to the approval of the headquarters the Forester has authorized a District organization including two Assistant District Foresters, a combination Administrative Assistant and Fiscal Agent, and the necessary clerical and stenographic help. In approving the organization, the possibbilities of working out a plan whereby the work of the different Branches could be combined was given thorough consideration and the proposed integrated organization is the result.

The Clarke-McNary work in the Lake States will be centered in the District office and it will be the responsibility of the District Forester to correlate this activity in as far as possible with the District work.

It is anticipated that forest practice in the ten units that will be established as a result of the purchase program will be very intensive on account of market conditions and proximity to the center of lumber consumption of the United States. A considerable portion of the work will involve an intensive program of planting and silvicultural operations. Purchase work will be initiated on 5 newly approved units within the next 60 days.

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Under the administration of Francisco Salazar as chief of the Forest Service of Mexico the first lookout tower in that country has been erected in the Chihuahua Mountains. This is a wooden tower more than 100 feet high. With the cooperation of Daniel Galicia, a private forester, Mr. Salazar plans to build several lookout towers on the mountain tops surrounding Mexico City.

MOVIES TO SHOW NEED FOR REFORESTATION

Clarence Brown, noted motion picture director, is in Yosemite National Park selecting locations that will be used for propaganda by the American Reforestation Association, known also as the Green Cross. Brown has offered to donate a short "special" to put before the public graphically the economic waste and the marring of scenic beauty through the destruction of forests. This film will be used to awaken the people to a realization of the need for drastic legislation against cutting down trees without some definite plan of reforestation. This work will be started as soon as Brown has finished directing "Carnival of Life," starring John Gilbert and Greta Garbo. - D. 5 News Letter

"Indoor Sports During the Blue Snow: While assigned to grazing reconnaissance on the Mt. Taylor District of the Manzano Forest, the writers were, on April 5, snowed in at the old Canyon Lobo Ranger Station and the most important duty presenting itself was figuring up the status of the D-3 personnel listed on an old 1922 organization chart which still clings to the wall. A total of 22 members are listed for the D.O. Of this number, 9 have transferred as follows: 5 to the Washington office, 2 to Madison, 1 to the Bureau of Plant Industry and 1 to a Forest as supervisor and 1 has retired. 12 or 54½% are still in the D.O. but only 9 of these are in their original positions. A membership of 135 is listed under Forest personnel. Of this number, 3.7% are deceased, 40 or 26.6% have resigned or have been otherwise separated from the Service, making a term average of 33-1/3%. 60 or 44.4% are still on the same Forest, 44 or 31.8% are in the same place and position, 5 men have been promoted to supervisorships and one transferred from the District Office to a supervisor position, 3 supervisors have been transferred to the District Office and one of these has gone on to Washington. This covers a period of five years plus. If there are any other snowbound parties, we should be glad to know what happened the five years previous." - J.C.N. & R.W.H.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII NO. 10 WASHINGTON, D. C. MARCH 11, 1929

RELATION OF CHIPPEWA FOREST TO LOCAL INDUSTRIES

By Howard Hopkins, Chippewa

[The best type of Forest Service publicity is to be found in the many interesting and important things that are actually happening in and to the National Forests. The ultimate significance of the things the Service has achieved, lies in the fine vigor and vitality of our far-flung forest domain. These things are worth pointing out in detail and by specific instances to our stockholders, the public. One of the important functions of Forest officers is to interpret to the public the full significance of the individual National Forest and of the multifarious activities through which this significance is achieved. Supervisor Hopkins in the following article, which has been released to the press through the Minnesota Arrowhead Association, gives an interesting example of this kind of interpretation. W. S.]

It is often asserted by those who profess to have studied the question that setting aside considerable areas in northern Minnesota for the production of forest crops will kill the industries in that region and tend to reconvert the area as a whole into a forest wilderness and stifle the towns and communities in the entire neighborhood. If one really searches for the facts in the case, he will discover an entirely different situation and that the result to be secured by setting aside areas for timber production will mean the building up of communities, towns, and stabilized, perpetual industries in the neighborhood that will be of greater benefit than any other use of the area.

The oldest area in Minnesota that has been set aside and handled for the raising of forest crops is the Chippewa National Forest, situated in parts of Cass, Beltrami, and Itasca Counties and comprising a net area of only 191,000 acres of Government land handled by the United States Forest Service. Since this Forest was completely turned over to the Forest Service in 1923, the timber sold has largely consisted of mature and overmature timber in need of removal to prevent decay. In the meantime the area was cruised and mapped to find out what the resources were in the way of timber and young growth and studies were made as to the growth of each species and future crops that might be expected. While these studies have not as yet been completed, they have secured sufficient information to allow the formulation of plans as to the handling of the timber crops of the Forest in regard to markets and local industries.

It has been found that the Chippewa Forest can best be divided into three or four subdivisions, as indicated by the accompanying map. Each of these units, or subdivisions, will produce an annual crop of mature timber for the establishment and perpetuation of a local mill.

The accompanying diagram indicates the present plan. The mature timber on unit 1 will be sufficient to supply the timber annually for the perpetual operation of a small sawmill at Cass Lake. At present there is no sawmill there and for this reason the industries are seriously crippled. The citizens of Cass Lake who fully realize the potential value of a forest area adjacent to them are now trying to interest a mill owner in the proposition, and it is only a matter of time before a mill will be located in that city - and this local industry will be started and located at Cass Lake, due almost entirely to the perpetual annual supply of raw material which the adjacent forest area can offer.

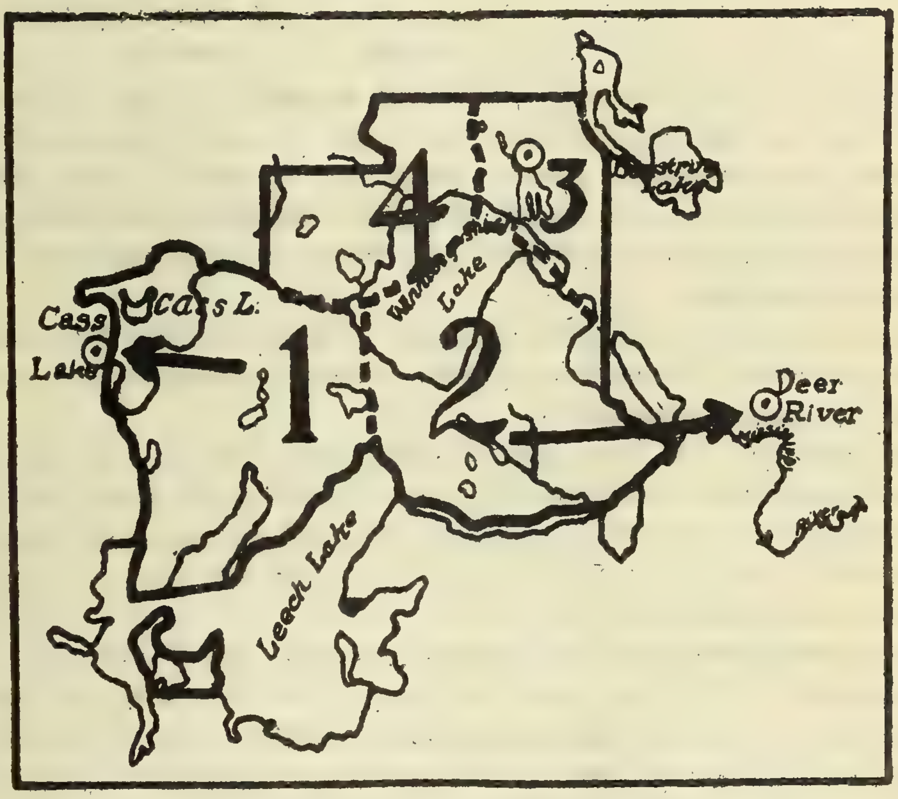
Unit 2 is the region which will logically be handled for the supplying of ripe trees for the local box mill at Deer River. This mill forms a vital part of the industries of this town and has cut off very largely all the adjacent timber outside the forest area. The owner of the mill at Deer River has been faced with a possibility of moving his mill with consequent great economic loss to Deer River due to the growing shortage of raw material. Unit 2 of the Chippewa National Forest will in all probability be able to produce an annual supply of mature timber for this mill to keep it perpetually in Deer River. Without this supply the mill would be forced to move in a relatively short time.

Unit 3 has no adjacent mill of any size and no local industries. It is planned to put up a sufficient amount of timber now in need of cutting to make it worth while for the successful bidder to install a permanent mill near the center of the area and thereafter sufficient ripe timber will be ready for sale each year on this area to supply this mill perpetually. In other words, this unit will probably cause the establishment of a permanent sawmill with the permanent industry both in the woods end and mill end of the operation.

Unit 4 is now being examined and cruised, and growth studies are being taken to determine how the annual crop of timber to be cut off this area should be handled.

When the Forest Service offers timber for sale it is always put up for bids and the highest bidder secures the timber. At once it occurs to one that this plan of handling the timber crops as stated above will be very apt to break down, for what is there to prevent a big mill from some distant point bidding and securing all the timber offered for sale on any or all units, then shipping this timber out and wrecking the local industries? While there is no absolute proof as to why this will not happen, there is on hand the best proof in the world in the shape of previous experience, which is after all the best of teachers. When the first timber sales were made on the Chippewa Forest, the bulk of the timber was sold to distant mills and shipped out of this vicinity. Gradually these outside shipments have dwindled and at the same time sales to local mills have increased. It is becoming more and more apparent that the days of the large mills are rapidly passing and in their place are rising small mills which will saw the raw products near the cutting area and ship out lumber rather than logs. This means that local industries will be built up and continued as long as raw material is supplied. The one way to establish and maintain a perpetual sawmill industry in any one community is by securing a perpetual annual supply of timber from that vicinity. This can only be done if a sufficient area is set aside for the raising of the timber crops. The fact that such area can be moderately small in size is well illustrated by the accompanying diagram showing the proposed method of establishing and supplying perpetual sawmill industries in the vicinity of the Chippewa National Forest.

Experience on the Chippewa National Forest has demonstrated that its timber crop will be devoted more and more to the establishment and maintenance of permanent small sawmills and local industries. What is being proved on this Forest will undoubtedly be true on other areas set aside for forest crops in northern Minnesota. There will undoubtedly be exceptions to this plan, as in the case of large private companies who will own forest areas for timber production to supply their own distant mills, but these cases will be the exception rather than the general rule. The setting aside of large tracts in northern Minnesota for the production of forest crops will not ordinarily drive out local communities or industries, but rather will build new towns and communities and establish new industries; but, most important, such areas will tend more and more to develop perpetual local industries whether such tracts are handled by the Government, State, or private owners. Such areas handled for the production of forest crops will benefit this State more than any other use to which such land could be put, securing the highest revenue for the counties and State and the best good for the people of this State.



CHIPPEWA NATIONAL FOREST

Diagram showing division of forest into units, each of which will support or build up a perpetual wood-using industry in the vicinity of the forest.

1. Area to supply local mill when built at Cass Lake.
2. Area to supply local mill at Deer River.
3. Area to supply local mill near center of unit.
4. Timber resources of the area, growth and future yield now being examined.

THE OLD ORDER CHANGETH

By Geo. W. Lyons, Modoc

I read with interest, W. C. McCormick's article in the Service Bulletin of January 14.

I was particularly struck by the statement "If the Forest Service were today what it was twenty years ago, I would not trade a Ranger's job for any job on earth; as it is now, I would hesitate a long time before even considering a Ranger's job regardless of salary."

It is true that the old order has changed; twenty years or more have wrought marked, and no one can deny, most beneficial changes. It is true that the Service has emerged from a hodgepodge of rule of thumb and hit or miss methods to a business organization. By this, I do not mean to cast any reflections upon the "old timers". All honor to them. They served their need most admirably and have passed out of the picture as a type, just as the old ox team was replaced by horse drawn equipment and later by the automobile, which now bids fair to give way to the airplane.

Could the average early day cow puncher type of ranger fit into the picture now? No more so than the ox team would function in present transportation problems.

I am often struck by the location of some of our old ranger stations, when a District Ranger was located every few miles. Bleak desolate locations where he would hole up in the winter and literally hibernate until the warm weather brought him out in the spring. Gosh! I do not see any glamor in that sort of life. A movie picture of a lonely cabin, coyotes, wolves, and bears prowling about; struggles in snow drifts, mad rides to fires with the heroic Rangers tackling the *front* of raging infernos; pot-shooting Basco herders when they get off their allotments and the like would go over big with the average movie fan! Ye Gods! what a picture!

Read any of the recent books which attempt to canonize the Ranger. What a travesty on the real work of our men! Attempting to make the job compare with a movie fan's conception of it resolves it into a huge joke.

The District Ranger's job today is the best ever. He is the real business manager of his territory and handles the work according to priorities (I hate that word), standards and system. He is looked up to and respected as the real business manager of his district, and that is what seems to me *needs* to be put across with the public; *his* public knows and respects his position in the community.

Have we taken the interest out of his job and made him a slave of system and order? I think not. I believe he is coming more and more to realize what it is all about and is filling the place in the organization which it was intended that he should fill. Don't get me wrong. I do not for an instant belittle the work of the old timers. But out of chaos has emerged order and system, out of rough and ready methods has emerged scientific business management.

Do we want to put on a big show for the lover of the unreal and thrill-loving public? Heaven forbid!

It appears to me that if we can put over to the public the fact that we are an up to date business organization, working to the best of our abilities to conserve, protect, and restore our great outdoor heritage for all time, according to up to date business methods, we will get somewhere. There is interest and glamor enough in pursuing our tasks, but let us not for an instant attempt to simulate the average movie plot in putting it over to the public.

Here we are attempting to teach the young idea what it is all about through educational methods in the schools and P.R. is doing wonderful work in this.

My experience with the "dolled up" District Ranger has been, that he might look mighty well in a picture, but Mr. Average Citizen who knows the game at all, prefers to see him in his chaps and spurs, or with a scale stick, a muck stick, typewriter, or otherwise equipped to deliver one hundred cents worth of service for his dollar's worth of salary.

So the old order has changed in that we have come to realize that if we get things done, we must adopt up to date scientific methods.

I cannot claim to be an "old timer," having only served since July 1, 1911, but in my humble opinion, the District Ranger job today holds more interest and responsibility than ever before.- I challenge the statement that the keen interest has waned and that it is so prosaic now-a-days.

Hats off to the old timers. Without them, we would never have come out of the early day struggles of the reconstruction periods with flying colors. More power to the present day business heads of our Ranger Districts. They serve just as the old timers did, but in accordance with the march of progress!

PRACTICAL SUGGESTION - RANGER SCHOOLS

By Marvin Klemme, Malheur

In discussing short and home-study courses for the Rangers, there is a rather important course which, so far as I know, has never been mentioned. This is a course in barbering.

Hundreds of short-term men never get a chance to come to town from the time they go on their jobs in the late spring until they come off in the fall. Probably eighty per cent of these men have their hair hanging down over their ears, and others have not shaved since they went on the job.

There are, of course, stations so isolated that a man's appearance isn't as important as other things; but then there are a lot of stations where there are apt to be visitors any day. It seems to me that the public at large, and especially the traveling public, is quite prone to judge the Service by the appearance of its personnel. It seems to me that quite an improvement could be made along this line, and still not make a military organization out of us.

When the Rangers hold their meetings in the spring, why not have some one with some knowledge of barbering hand out a few points? Then when the Rangers make their occasional visits among their short-term men they might carry a pair of "clippers" along and sort of improve the appearance of their men. Such a haircut may not be anything fancy, but at that it would be a considerable improvement over the present system. And as for shaving, most any one can shave himself if he gets the right kind of encouragement.

(We think this is a good suggestion and publish it accordingly. Touching on use of "clippers" we suggest that the Rangers try roping and throwing the short term men if gentler means fail - Ed.)

GOT ANY SECOND-HAND PLANT SPECIMENS?

Prof. Boris Fedtschenko, the well-known Russian systematic botanist, has expressed a desire to add to his herbarium any Forest Service plant specimens that are not needed here. The Washington office has no duplicate specimens, but perhaps some of the District offices, Supervisors, Rangers, or Forest or Range Experiment Stations have some duplicate specimens in their herbaria that they can send to Dr. Fedtschenko? The address is: Prof. Boris Fedtschenko, Botaniste en Chef au Jardin Botanique Principal, Leningrad, U. S. S. R.

HOONAH PRAISES CAPTAIN PETERSON

Word of the great appreciation felt by the people of Hoonah for the timely aid rendered during the recent flu epidemic that confined, for some time, over 300 of the 500 population, was brought to Juneau today by the Rev. George J. Beck, who with others in the stricken community labored night and day to alleviate the suffering of Indians and whites alike.

Rev. Beck told of the first outside aid that was brought to the people who were without medical supplies of any description. George Peterson, Captain of the Forest Service boat R-7, came into the harbor to anchor for the night and on hearing the plight of the town, set out at once for Juneau for emergency medical supplies. Handling the boat alone Peterson ran that night reaching Juneau the next day, and after taking aboard the needed medicines, set out on the return trip, reaching Hoonah late the following day. When Capt. Peterson reached Hoonah he had been without sleep for over 72 hours and the trip to Juneau and return was made during severe stormy weather, which had for several days kept small boats in the harbor.

"That the trip made by Capt. Peterson was a great measure toward the saving of numerous lives goes without saying," said Rev. Beck, "and the people of Hoonah are grateful beyond expression.

"Soon after Peterson's trip the cutter Unalga arrived and the aid brought and the doctoring rendered by the medical officer of the Unalga, carried the several hundred ill through the epidemic without the loss of a single life, and to the cutter, the two school teachers, Mrs. Hastings and Mrs. Call, who alone of the teachers were not taken ill, and to Captain Peterson, goes largely the credit for averting what would otherwise have been a calamity," said the Rev. Beck. - From the Daily Alaska Empire, Feb. 6, 1929

CALIFORNIA SHOUTS "CONTROL THE AX"

Forest fires are steadily growing worse in this country, and fire prevention is important. But another real important factor in the depredation of our forests is the ax. Spare the ax and save the forests.

Out of 822,000,000 acres of virgin forest only about one-eighth remains.

Nowhere in the world is there anything like the kind of timber we need to take the place of what has been destroyed. Until the ax is controlled, there can be no real solution of the problem. On four-fifths of our forest land the ax holds unregulated sway. The National Forests alone are safe.

The ax must be controlled on privately owned lands - or the future prosperity of our country is seriously threatened. - D. 5 Bulletin

WORLD'S TALLEST TREE FOUND

By C. D. Cameron, Siskiyou

Where is the world's tallest tree? It certainly grows in the "Redwood Empire" of northwestern California, for in this region flourishes the highest of all trees, the Sequoia sempervirens. The Redwood Highway Review presents a "candidate" for the honor. This specimen stands at the edge of the heaviest acre growth of redwoods in existence, near Wilson Creek, a mile east of the Redwood Highway in Del Norte County. It is in a perfect state of preservation and still growing. Its height is estimated at 475 feet. Can any other tree be found in the U. S. that is taller than this one?

(How about a picture of it? - Ed.)

YE EDITOR DISCOVERS

Our Chief tells us he has been going to school - and that he likes it. We think we are quoting him correctly as follows:

"As a student of the course in 'Executive Management' conducted by Peter Keplinger, I have been reading the lessons, discussions, and decisions with great interest and profit. The direct approach to the subjects discussed and the frank, thoughtful comments on them are refreshing. Shortcomings are pointed out and means of overcoming them suggested. First come the fundamentals, and then the application of experience, training, and sound judgment to meet each problem or situation as it arises, is anticipated, or is precipitated.

"The reaction of the individual to the problems stated and the discussions is one of the most helpful phases of it. It is almost the equivalent of a chat with each member of the Service participating in these discussions. It is stimulating to know how the other fellow thinks a problem common to all of us should be met."

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The class descriptions of field positions which have been submitted to the Personnel Classification Board have been mimeographed in two volumes, one including administrative positions and the other research positions, and copies have been sent to the District Foresters and Forest Supervisors' offices.

The Personnel Classification Board will not complete its enormous task of field classification until late next fall. Its progress or interim report was submitted to Congress the latter part of February and has been ordered printed. It will be available in about 30 days, but copies will have to be secured from the Congressional Committee. The report includes a statistical story setting forth what the wages and statistics unit of the Personnel Classification Board has done in the collection of data on outside pay schedules, working conditions, etc. It discusses the general wage problem of the Government, e. g., whether the Government should aim at being a model employer and the theory of the minimum wage. A description is given of two European civil services written by well-trained students of such subjects.

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Will C. Barnes has been delving into the records and into the memories of old timers in the cattle business and has written a history of the old Chisholm trail. Here is his conclusion, after a good deal of study:

"From all the evidence unearthed, it seems absolutely safe to say that the famous Chisholm Trail, over which more than ten million cattle and horses were driven north from Texas, in the years between 1863 and 1875, to Abilene and other Kansas points, was laid out by Jesse Chisholm, and was in use by the Indians under his name long before Texas cattle began to travel over it."

Mr. Barnes's story, published in the January and February numbers of the "Producer", of the old cattle trail, of the migrations of the Wichita Indians and affiliated tribes back and forth over it, and of the half-breed Cherokee Jesse Chisholm who blazed the trail, is good reading.

RANGER STORM RESIGNS

Forest Ranger Earl V. Storm is resigning from the Forest Service on March 31. He first served in the Forest Service as a fire guard and forest patrolman on the old Wehaha Forest in District 6. During 1918 he handled carrying capacity studies for cattle on the Lewis & Clark Forest in District 1. In 1919 he transferred from District 1 to District 4, where he was assistant to Dr. A. W. Sampson at the Great Basin Experiment Station for two years. From 1921 to 1927 he carried on browse studies on the Dixie Forest in southwestern Utah. The past two years Ranger Storm has been engaged in range studies work in connection with the Kaibab deer and also in administrative work on the Kaibab Forest. - C.N.W.

A MANUAL FOR SHORT-TERM MEN

By A. G. Simson, Northwestern For. Exp. Sta.

In this day, when almost everyone but the authors are surfeited with manuals, handbooks, and circulars, suggestion of a new one will probably bring forth nothing but protest. Nevertheless it appears that we can well use another, namely, a handbook or manual for the short-term man.

The school for short-term men has been a valuable asset and has increased the efficiency of the summer force immensely, but it cannot be expected to solve the whole problem. Many of the men come to the school without the faintest idea of what it is all about, others have only a rudimentary notion. Two or three instructors cannot hope in the few days at their disposal to ground fifty or seventy-five men in the fundamentals of the fire finder and its operation, compass work, pacing, firefighting, smokechasing, telephones, first aid and the hundred and one other things that the good short-term man should know. Much more would be accomplished at the school if, when the Ranger hires his men, he could send each one a fully illustrated manual of the things he should know, with instructions to study it carefully before appearing at the school. Moreover, each member of the short-term force would keep his copy throughout the summer for further reference and study.

The handbook should be a concise exposition of the various subjects, couched in simple language and plentifully illustrated, and should give only the practical essentials of the subjects treated. Assembling such a book should not be particularly difficult as practically all of the material could be culled from existing Forest Service handbooks and manuals. Proper selection and editing are all that is necessary. Certainly it should be well worth the effort because it would result both in better instruction and in more uniform instruction.

CLIMATE - HERE AND THERE

A letter received from Dr. C. A. Schenck who is now in Germany outlines some striking analogies between the monthly runs of temperatures prevailing in Arizona and prevailing at meteorological stations in Europe. For example: The climate of the Alpine Ranger Station (Apache) resembles closely that of Stockholm, Sweden. The mean monthly temperatures coincide, but the Alpine Ranger Station receives more rain on the whole than does Stockholm. The mean monthly temperatures of Fort Huachuca are analogous to those of Athens, Greece, but Athens has less rain in July and August. The run of temperatures at Paradise Station (Coronado) coincides with that of Bordeaux, France, but Bordeaux has more rain in October, November, and December. The climate of Flagstaff is a close kin to that of Vienna with the difference of rainfall during summer in favor of Vienna. Jerome temperatures have a run similar to those of Rome. Rome, however, has less rain in July and August and more in May, June, November, and December. And the temperatures at Williams have a trend analogous to that of Berlin without, however, the dry June of Williams. - District 3.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII. No. 11 WASHINGTON, D. C. MARCH 18, 1929

THEY ALSO SERVE

By M. A. Benedict, Sierra

The Sierra has always prided itself on its Service spirit and because we have been thrown together so closely that spirit is a part of our family life.

The women of the Sierra have played no small part in keeping this spirit alive and in playing their part in Service activities. As I look back on almost twenty years of Sierra experience, I can see incidents that stand out as glorious examples of that spirit among the women. Mrs. Shinn, who was the confidant of all, never had too many troubles of her own to prevent her smoothing out our difficulties, whether it was helping some new Ranger with his expense accounts or consoling a bride on the failure of her first biscuits. She lived the highest ideals of the Service and many a man now in Service work can thank her for his fine ideals of public service.

Mrs. Mal McLeod, wife of Mal of McLeod tool fame, is another who has given to the Service an example of fine and unselfish service. I'll bet she has pounded out on the old Oliver more June 11th reports than any one else in the Service, and when Mal was in the field she could and did handle many a fire as well as he could. Living in isolated communities she was the first to respond if any one was sick or in trouble.

Then there's Rose Boothe, wife of Roy Boothe, now Supervisor of the Inyo. Always on the job and willing to go anywhere and make a lark out of it; she helped keep all of us cheerful and glad of the chance to do our work.

I also recall Mrs. Chester Jordan and her place on the Sierra. I often wonder how she ever stood up under the strain of being telephone operator, clerk and housewife to say nothing of "riding herd" on Chester, back in the old days when Shaver was on the boom and there was from two to ten Forest officers drifting in there daily; but she seemed to get it all behind her and still have time to enjoy the job. I can still see her bending over the camp fire with the snow falling in a white cloud around her, but with never a complaint.

One stormy night in June I was awakened by the telephone bell and Mrs. Frank Price was on the line; 2 A.M. it was, and she said there were several lightning fires on Stevenson Mountain and as Frank was on a trip she had routed out a bunch of men, outfitted them, and sent them to the fires. The men got all of the fires under control that night, and they were in bad country, too.

So it goes through all of the Sierra history, and the wives of to-day carry on in the traditional way. No finer examples of unselfish service could be found than that shown by the women of the Forest Service, and we are eternally grateful to them.

LAKE CHELAN POWER PROJECT

By P. T. Harris, Chelan

This project, recently completed, as to two generating units lies largely within the Chelan National Forest. Its execution presents features of interest to engineers, - also details of personal, comic, and tragic nature worthy of a novelist's skill.

Lake Chelan, fifty miles long by a mile wide, with precipitous shore line, has a drainage basin of 750 square miles and furnishes 640,000 acre-feet of water with a drawdown of only 21 feet. This, suspended over a drop of 415 feet to the Columbia River, has long been tantalizing the power engineers.

Engineering problems involve the construction of an artificial dam across the Chelan River, whose bed is through a glacial moraine of compacted sand, gravel, and clay, which forms the natural dam creating Lake Chelan. The man-made dam is of combined concrete gravity and movable steel crest type, 202 feet long between abutments, 39 feet high at the piers, and 21 feet high at the sluiceway sections between piers. Each of the eight sluice-way sections is equipped with a Taintor gate or movable steel flash-board. Each gate is 20 feet long and 14 feet high. By the operation of these eight gates the water level in the Lake can be controlled within the prescribed limits. Concrete paving of the river bed and banks extends 125 feet above and 200 feet below the dam with cutoff wall 27 feet deep underneath. A cement-lined tunnel, 14 feet in diameter and two miles long, leads from the dam to a steel surge tank. This, with its riser pipes, is 229 feet high and holds 10,000,000 pounds of water. Thence, twin steel penstocks in a tunnel 1,100 feet long descend to the power house. Here the valves, generating, distributing, and testing machinery are controlled by a maze of wiring from a single room. Surveys of the project included control by triangulation, traverse of the precipitous lake shore, topographic survey for five-foot contours and monumenting all property and public land survey lines encountered. Add to this the clearing of 125 miles of shore line, rebuilding some twenty miles of road, a concrete bridge across Chelan River, sixty miles of 'phone line, docks and other structures, and a general picture is given of the job undertaken to be done in 14 months. Through delays for rights of ways, eighteen months were required to put the plant into operation. When completed, with another tunnel and two more generators, its installed capacity will be 128,800 electrical horsepower of which 54,000 horsepower will be continuous, -greater than any existing plant in the Pacific Northwest.

The licenses required from the State and Federal Power Commission were preceded by public hearings at which objections were raised, particularly the despoiling of a scenic asset of national importance, for commercial purposes. Why not use some of the other available sites for the power needed? The War Department appeared as guardian of navigation on the Lake. The National Conference on Outdoor Recreation had its day in court. The federal license finally granted stipulates that the shore line be cleared and kept clear even to removing of stumps as required; that the water be kept at certain high levels during the summer season; that the maximum variation of water level be 21 feet; that recreational use of the lake shore be allowed; that all rocks dangerous for navigation be marked or buoyed; that all property damaged be paid for or replaced; that assistance be given the Forest Service in fighting fires, and various safeguards for the right of the United States to take over the project at the end of the period for which the license was issued, - 50 years.

Flood rights, damages to property, and rights of way required delicate handling, especially as the licensee had no legal power to condemn. When this became known, those who had not settled were in clover while those who had settled were correspondingly otherwise. But those of the latter class whose shore line had not been cleared discovered that the easement they had given failed to convey the right to clear. Competition as to who could name the highest price was rife, and some liberal payments were made before the situation was unexpectedly calmed by decisions of the State Supreme Court, conveying the right to condemn, and by the Federal Power Commission in regard to clearing. While comparatively few miles of the shore line were improved, and most of it was in National Forest ownership, the easements, damages, replacements, etc., are estimated to have cost more than $2,000,000. It must have taken some nerve to tackle that right of way problem without the power to condemn.

Financial problems are further indicated by the sale of the project early in the game by the Great Northern Railway Company to the Washington Water Power Company. The railway secured the estimated amount of juice needed to electrify its lines from Wenatchee to Troy, Montana, and agreed to furnish all flood rights and rights of way and settle all damages. Some chance for horse trade there and some complicated contract of sale. The amount paid by the power company is said to have been $1,500,000. The cost of the project has been quoted at from $10,000,000 to $20,000,000.

The job of construction, handled by the Grant Smith Company, is a story in itself. Work with large crews was crowded through the snow and winter weather. For rebuilding 30 miles of Forest Service 'phone line along the rugged lake shores an extension ladder was devised on a raft. This was towed and held against the cliffs by a launch while linemen drove iron pipe into the ledges to support the wire. Big scows were built and equipped with derricks for transportation of the felled timber, drift logs, etc., to open bars where burning could be safely done. Trees were cut flush with the rocky ground. On alluvial land at the head of the lake large cottonwoods and firs, up to six and eight feet in diameter, were bored with power drills, felled and broken up with powder, piled and burned. There were duckings in the deep icy water of the lake but no casualties. The tunnel faces holed through with an error of only three-eights inch in alignment. Fumes from the gasoline locomotives and shovels constantly operated in the tunnel were neutralized with chemicals and the air kept well-ventilated. Machinery was used to screen, clean, and regulate the mixing of thousands of tons of concrete. It was an exceptionally clean, thorough job with the men well housed and cared for. Only one serious accident occurred when caving of the river bank buried several men.

Administration by the Forest Service entailed dealing with the power, railway and construction companies whose functions overlapped, securing proper degree of clearing, fire protection, and disposal of refuse and adequate reconstruction of varied improvements. Damage claims investigated included one for the breeding of San Jose scale on flooded brush where the licensee was forbidden to clear, another for loss of medical practice through interruption of telephone service; others for additional damages where the settlement accepted failed to mention clearing. Were the details and incidents of the job known, many a laugh could be caused, - and perhaps some tears before final settlements are received.

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Freak Bushes From Foreign Lands are out of place in the country landscape, says J. P. Porter of the New York State College of Agriculture. They are specimens for the botanical garden, not foliage for the countryside, continues this authority on flower-growing and landscape decoration. Plant farm dooryard, school grounds, and grange premises with native shrubs instead of fancy imported plants that do not harmonize with their surroundings, he advises. - District 6.

NATIONAL PARKS ALSO HAVE ACQUISITION PROBLEMS

By L. F. Kneipp, Washington

The Forest Service is not alone in its problem of consolidating the public reservations under its control. The National Park Service has a similar problem made much more acute by the fact that the private lands occupy vitally important situations and contain enormously valuable stands of timber whose removal would work disaster upon the scenic beauty of outstanding Park areas.

However, the National Park Service has means of relief which the Forest Service thus far has not been able to develop, namely the availability of some of the Rockefeller millions. Making an original grant of five million dollars toward the cost of acquiring the Great Smokies National Park, Rockefeller agencies next proceeded to make available liberal sums for roadside clearings on Park highways; then additional funds with which to acquire private lands in the northern part of Jackson Valley; and now, more recently, propose to meet half the cost of liquidating private ownerships within the Parks provided Uncle Sam will pay the other half.

This latter proposal almost went on the rocks when the second deficiency bill in which it was included came up for consideration. As originally worded it authorized arbitrary condemnation of all lands within the National Parks. Senator Walsh and Senator Wheeler, who own homes within the Glacier National Park, and other Senators demurred to this provision. After prolonged discussion a compromise was perfected which exempts from condemnation lands occupied for private residential purposes or owned by religious organizations.

Anticipating the enactment of this law the Director of the National Park Service proposed to the Forester that legislation be secured whereby the President upon the joint recommendation of the Secretary of the Interior and the Secretary of Agriculture could add to the Yosemite National Park any or all of about 11,000 acres of land now within the Stanislaus National Forest. By far the greater part of this land is privately owned and if included in the Park would have to be purchased under the provision of the bill above mentioned. This boundary legislation moved through Congress with meteoric speed. The heads of the two Services had hardly agreed upon its provisions before it was introduced; the ink on it was hardly dry before a report was requested by the House Committee, and all the other legislative steps moved with equal speed, so that notwithstanding its belated introduction it reached the President in ample time to become a law before the 70th Congress adjourned. Under its provisions the two Departments will work out the most appropriate dividing line between the Yosemite Park and the Stanislaus Forest.

A BROADER FIELD FOR RESEARCH

By M. R. Kennedy, D. 2

Every Supervisor, in some Districts at least, ought to know some of the essentials of buying and what he needs to buy. It is not meant to infer that Supervisors should make an intensive study of this function, but more thought and action could be given to the type of equipment and supplies best suited to meet requirements. Also, Supervisors could do more experimenting, and, for that matter, the Forest Service as a whole ought to awaken to this necessity and broaden present activities along research lines, whatever the nature and scope of the undertaking. Economy of time and material will never go out of fashion.

and the saving which can be effected in purchasing and use of materials, supplies and equipment, is an economic problem, the investigation of which will amply repay any concern interested in it, not excepting the Forest Service.

Industrial research in corporations is not limited to two or three commodities--it covers the whole plant of operations and every article produced is passed under the scrutinizing eyes of the laboratory. Research of any consequence in the Forest Service appears to be limited to one or two Branches. If research is a profitable investment for the corporation, also for a few activities of the Forest Service, it seems to me that it might be extended or broadened in all Branches with good results.

There is an unusually large field open for a comprehensive investigative program concerning equipment and supplies and the coordinating of the results of experiments among Districts. Our fire equipment is pretty well standardized but some of it is obsolete. Some progress has been made by a few of the Districts on road equipment, but the remainder of the Districts have very little to say. How about road shovels and a lot of the other small equipment? Nothing is said or done about such things, yet they constitute a pretty big item in construction costs.

Paints, signs, fire tool caches, roofing, office supplies and equipment, and a host of other items ought to present an interesting study. This District is now conducting an experiment with a new type of sign, that is it is a new sign to the Forest Service, and we should know within two or three years of the outcome. Our experiment with a new type of fire cache has just been concluded, with the result that we now have a little weatherproof, galvanized steel house that is a real housing place for fire tools, and, what's more, the men in the field like it.

Paints, well, that is something else that sends a quiver up one's spine. It's like a germ, hard to localize. There is one man in the Forest Service, a paint technician, who knows something about paints and their characteristics, and his skill ought to be more fully utilized by the Districts. Test panels of paints of different formulae ought to be erected in representative sections of each District, and, if properly conducted, the Forest Service would, within a few years, have concrete evidence of the kind of paint best suited to its needs. Climate has a big influence on paint and the paint most suitable for this District would probably be a failure on the Coast or even in District 3. Paint men tell me that the paint formulae promulgated by the Federal Specification Board might be satisfactory for some localities but are, in all probability, wholly unsuitable for general use by all the Districts.

Dr. Browne will probably tell you that the paint business is just an infant, just in its formative stage, so to speak, and that no one really knows all about it or what a painted surface really accomplishes outside of appearance. Therefore, it seems to me that we have a wide open field for some real testing and experimenting on our own hook.

Experiments, research, testing, buying, etc. ought to be not only of general interest but of very direct and personal interest to every Forest officer in the Forest Service charged with the responsibility of handling allotments--the public's investment in Forestry--and making them pay dividends.

NATIONAL RESEARCH FELLOWSHIPS IN AGRICULTURE AND FORESTRY ESTABLISHED

A number of fellowships in the fields of agriculture and forestry are being established by the Board of National Research Fellowships in the Biological Sciences. The fellowships are intended not for the support of work in the more specifically applied phases of agriculture and forestry but for the development of men planning to work in the fundamental aspects of these subjects. They are intended primarily for relatively recent graduates and not for those already professionally established, and are open to citizens of both sexes of the United States and Canada who possess a Ph.D. degree or its equivalent. The appointments are for full time, and fellows are not permitted to engage in any other remunerative or routine work. The choice of a place to work is left to the fellow, subject to the approval of the fellowship board.

The basic annual stipends are $1,800 for unmarried fellows and $2,300 for married fellows in America, or $1,440 and $2,184 respectively with additional travel allowance for fellows appointed to study in Europe. Awards are made for one year, but fellowships may be renewed.

The final choice of fellows for 1929-30 is to be made by the board at a meeting on April 25-26. Applications to be considered at this meeting should be received by April 1. They should be addressed to the Chairman, Board of National Research Fellowships in the Biological Sciences, National Research Council, Washington, D. C.

YE EDITOR DISCOVERS

A friend of forestry, who wishes to remain anonymous has given the Society of American Foresters $1,250 to be awarded as prizes of $1,000 and $250 for the best essays describing the present forestry situation in the United States and proposing a nation-wide remedy for its solution.

Essays submitted in the contest shall cover: first, the actual forestry situation in the United States to-day; second, a nation-wide remedy which (a) will, if applied, solve the problem of a permanent and sufficient supply of forest products and secure other benefits of forests essential to the public welfare; (b) will be applicable in actual practice; and (c) can be applied in time to meet the Nation's needs. The essays must be based not on hypothetical assumptions but on the actual situation in the United States today. All essays must be in the hands of the committee of award not later than September 30. The awards will be announced at the annual meeting of the Society of American Foresters in December, 1929. Details of the conditions of the competition may be obtained from the Society of American Foresters, Lenox Building, Washington, D. C.

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Airplane topographic mapping of the Tongass National Forest in Alaska, which was begun in 1926, is to be completed next summer. In this work the Navy Department, Geological Survey, and the Forest Service will cooperate. A detachment from the aircraft's squadrons of the Battle Fleet will be detailed for the work, and it is now planned to send three Loening amphibians from the Battle Fleet with the U. S. Gannet as tender and a barge which is now at the Puget Sound Navy Yard. It is expected that the work will begin about May 25. The areas to be surveyed include Baranoff, Chicagoff, and Kuiu Islands and portions of the mainland from the Cleveland Peninsula to Berner's Bay. This aerial survey will be of great value in timber reconnaissance and in determining routes and locations of necessary forest trails. The areas to be surveyed also include the heaviest mineralized sections of the Tongass and one of the most promising in mineral developments in Alaska.

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A system of national sanctuaries where migratory birds may feed, rest, and breed unmolested, will come into being by the bill signed on February 18 by President Coolidge. In every State of the Union and in Alaska one or more of the natural woodland sanctuaries will be created for game fowl and migratory birds under the program which is estimated to be completed within ten years. By the terms of the new act, a commission would be created consisting of the Secretaries of Agriculture, Commerce, and Interior, two members of the Senate and two of the House. They would be charged with the responsibility of selecting suitable sanctuaries, working in cooperation with the State authorities. The act authorizes an appropriation of $75,000 for the first year, $200,000 the second, $600,000 the third, and $1,000,000 for each of the succeeding seven years.

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An Associated Press item on Chapline's paper read before the American Association for the Advancement of Science tells how "The range cowman now learns how to lure his herds with the use of salt, to get them away from the overcrowded valleys which they prefer and up to the slopes where there is unused forage." The article has the lead "Business Efficiency Studied by Cowboys," which we suppose is as good as one can expect from a newspaper man unversed in pure science.

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The National Forest Reservation Commission at a meeting held February 21 approved one of the largest programs ever submitted, with the exception of the Waterville tract. The Commission approved 149 cases, involving 234,920 acres of land and an obligation of $944,000. In the program are included the Heart's Content area, the Missouri-Pacific lands in the Ozark, first purchases in Louisiana, and the first purchases in the new Keweenah unit in the Upper Peninsula of Michigan. The Commission also approved the extension of Weeks law purchases to the Choctawhatchee and Ocala Forests in Florida, and the creation of a third unit in that State to be known as the Osceola.

RAYON PLANTS IN THE SOUTH

The Du Pont Rayon Company has recently acquired another plant site in the South, this time at Waynesboro, Virginia, on which will be erected a plant for the manufacture of rayon by the cellulose acetate process. It will represent an investment of between four and six million dollars.

The day is undoubtedly coming when the cellulose for the numerous rayon plants will in large part be converted from the hardwoods which clothe the Appalachian range.

The Richmond plant of the Du Pont Company will likely be in operation by July, 1929, with annual output of 3,000,200 pounds of yarn. The plant will employ approximately 1,700 people, of which 800 will be women.

The raw material to be used in the Richmond mill is bleached sulphite pulp. The average production per employee per day is about 6 pounds of rayon. It is therefore of greatest importance in the manufacturing of this product to have an unusually good labor supply. The South furnishes this commodity in large quantities at very low wages. Another important point is a never ending supply of good water. Provisions are being made to supply 17,000,000 gallons of water per day from the James River to the Richmond plant. Of this amount between 4,000,000 and 5,000,000 gallons will be filtered and chlorinated. The remainder, or 12,000,000 gallons, will be used daily for power house operation.

Still another large rayon plant is under construction near Asheville. It's water supply will likely come in large part from the "Pink Beds" on the Pisgah.- D. 7 Bulletin.

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Forestry Throughout The World: Ireland has been largely denuded of trees and the Free State Government is interesting itself seriously in the question of reforestation. This year it is planting seven million trees and a total of 27 million have been planted since 1922. - D. 3 Bulletin.

MISS SCHODER RESIGNS

By C. E. Rachford, Washington

A short time ago I was interviewing some District officers on the prospect of transferring a clerk to the Washington office. The question was invariably asked: "Why do you want another clerk"? My answer was: "Miss Schoder is resigning on February 28 and accepting a position of higher responsibility."

I can now be more specific as to the position. She and R. R. Hill were married at the Unitarian Church by Reverend Pierce on February 22. The Branch of Range Management loses the active services of a most competent employee who entered the Forest Service in 1917 at Denver, and served successively in the offices of Operation, Forest Management, and Range Management in the District Office until her transfer in 1925 as chief clerk in the Branch of Range Management in Washington, a position she has held and filled most creditably since that date.

COMMISSIONER FLORY SUBMITS HIS FIRST REPORT

The first annual report of the Commissioner for the Department of Agriculture for Alaska has been submitted to the Secretary by Charles H. Flory, who is serving in the double capacity of Commissioner and District Forester of District 8. Commissioner Flory gives a detailed statement of the function of the new office of Commissioner for the Department which was created a year ago. He describes the work that is being done in coordination of fiscal matters and procurement of supplies and equipment. The report takes up the problems of various Department Bureaus in Alaska including the Food, Drug, and Insecticide Administration, the Agricultural Experiment Stations, Biological Survey, and the Forest Service. Concerning the work of the Forest Service he has this to say:

"It is hardly necessary to go extensively into the need for adoption by all agencies concerned of a program designed to eliminate the damage now being done annually by fire to the forest, range and wild life resources of the Interior of Alaska. ......

"It is realized that there would be great practical difficulties in the way of range and forest fire suppression, even if ample funds were available. The country is so vast, the population so sparse and scattered, and the transportation facilities so inadequate, that it is almost hopeless to undertake to extinguish a fire once it is well under way.

"Nevertheless fire protection is well worth the effort. Through a program of intensive cooperation on the part of all agencies concerned in reducing or eliminating possible causes of fires, and through a sustained campaign of education, we may in time be able to reduce the number of fires materially and save the natural resources of timber, forage, and wild life from destruction. ...."

Commissioner Flory recommends a program of fire protection for natural resources throughout the Territory, embracing all Federal and Territorial agencies and organizations, this program to include a general survey and classification of all timber, grazing, and agricultural lands.

"Some (more) Mississippi River History"

In connection with the article in the Service Bulletin of December 31 concerning who really discovered the Mississippi attention is called to the Narrative of Cabeza de Vaca concerning the Expedition of Narvaez (Spanish Explorers in the Southern United States, Scribners) which gives an account of their visit to this river at its mouth in November 1528. -- L. H. Laney, Manzano, D 3.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people . . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL.XIII No. 12 WASHINGTON, D. C. MARCH 25, 1929

THIRTY YEARS

William R. Kreutzer of Colorado
is hereby appointed Forest Ranger
of the General Land Office at a
salary of Fifty dollars per month
to take effect when he shall file
the oath of office and enter on duty
Provided that said appointee shall
keep a horse constantly on the
Reserve for use in case of necessity

Th. R. Ryan
Secretary.

Department of Interior
Washington, August 30, 1898.

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There are today relatively few men in the Forest Service who can boast of thirty years continuous work in the administration of the public forests of the United States. A considerable number of men were employed in those early days, but almost an equal number dropped out before many years went by. Obviously the munificent honorarium which was offered was not sufficient in itself to exert much pulling power.

Supervisor "Billy" Kreutzer had something else in mind besides a job. He had the incentive which comes from a family tradition. His father having had the opportunity to learn the principles of forestry in turn from his father, who was a Forester for many years under the German government, was desirous that his son should enter the United States Forest Reserve Service in spite of the very low salary that was offered by the General Land Office and thus embark on a professional career. That this was no coincidence nor the flush of a boyish enthusiasm is shown by a letter dated April 6, 1899, from Binger Hermann, Commissioner of the General Land Office to Forest Ranger William R. Kreutzer replying to his request for a list of books on forestry which he might study in connection with his new job. The young Ranger's education in forestry began thereupon and although long since carried to a high degree of scholastic attainment is not yet completed. Perhaps again it was not a mere coincidence that Kreutzer recently made the highest rating among the Supervisors in District 2 in marking the timber on a specific strip.

After his appointment under the General Land Office there followed for Ranger Kreutzer days of turmoil, of "excursions and alarums". His original instructions were "to take horses and 'ride as far as the Almighty would let me' and to 'get control of the fire situation on as much of the mountain country as was possible.' These together with directions about keeping 'some sort of daily record' of my service and movements constituted the advice that I was to follow in executing my duties." A large order, according to our present standards. Needless to say, there were plenty of fires and there was plenty of distance to ride. Along with the fires there was the matter of trespass. A bad combination, and one which taxed physical endurance and courage alike. Then there came the permits, and the Rangers on the forest frontier had a new job. The idea of a permit involving regulation and paper work was distasteful to the average stockman of that day. Tactics as well as tact were required in introducing the new order. Not the least of the obstacles to be overcome was the provision in one of the terms of the application blank by which the stockman was to bind himself, his employees, and his rustlers to extinguish fires on the range. Just what was meant by "rustlers" is uncertain, but just what the stockmen took it to mean soon became perfectly clear to these unfortunate representatives of the Government who had to "take their application".

Along with the grazing permits came other instruments of writing, not the least of which was the free use permit; this happened in 1902. Instead of a 874 form, carried in the pocket and executed in case of need on the flat side of a saddle horn "it was necessary to prepare a two page application, signed by the applicant and witnessed. The area was marked out on the ground and a copy of map, estimate, and forest description were fastened to the application, together with an individual report on the applicant." (Undoubtedly this later covered in detail such matters as his financial responsibility!)

Then there were squatters. Men with their families whose personal human rights had very little foundation at that time in the law. The latter was clear, but to a man who desired to put into his work the same qualities of intelligence and justice which were soon made a part of the Forest Service code by these same early pioneers, it presented some difficulties. Human interest stories by the dozen could be written on the experiences of the early soldiers of fortune who found themselves squatting on reserved public land. As a fitting climax to Kreutzer's early experiences in helping establish National Forest administration in Colorado, there came the sheep wars, and wars indeed they were, with cowboys, guns, homesteaders, sheep wagons, and all the other trappings, including lead where it was needed. With the establishment of the sheep on the high range - for Kreutzer was successful in doing what he set out to do - the "roughneck stuff" came to an end, and Supervisor William R. Kreutzer emerged into his present role of well-trained, capable Forest Supervisor, qualified by his early years of experience to cope with a different type, but in many cases a no less difficult type of problem, such as forms a part of the daily routine in handling the established business of a valuable forest property.

These experiences covered a span of approximately fifteen years, including the position of Ranger on the Old Plum Creek Timber Land Reserve, August 10, 1898, to May 15, 1901, and the same position on the Battlement Reserve, until December 1905, when he was transferred as Ranger to the Gunnison. Meanwhile the Forest Service had been established, February 1,

1905. After becoming Ranger-In-Charge, he was made Supervisor, January 1, 1907, and held that position until February 1, 1921, when he was transferred to the Colorado National Forest as Supervisor, where he is still in active service.

During his long and productive service in forestry, Kreutzer has crossed trails with many other men who contributed in those early days towards making the organization, to which we point with pride, what it is. In his diary appears the innocuous statement "At Cement Creek I met the assistant ranger and about September 1 (1905) Guard C. J. Stahl." This was on the Gunnison. Other names appear in this record of men who are still active in forestry, including Rangers Hielman and Thurman, still on the Gunnison; H. N. Wheeler, now in Washington; and E. T. Allen, Secretary of the Western Forestry and Conservation Association on the Pacific Coast.

Supervisor Kreutzer is essentially a Western man. Born in Colorado, he grew up and went to school there and has had his entire Forest Service experience within that State. In addition to his ebullient enthusiasm and personal loyalty, he has contributed to the progress of forest administration by his through understanding of local conditions. - District 2.

TWENTY-FIVE YEARS WITH NO TIME OFF FOR GOOD BEHAVIOR

By Jesse W. Nelson, D. 5

On being advised my name was on the list of the 25 yearers of the Forest Service and that I was therefore expected to write a biography of past activities in the Service, my first thought was that some one was trying to take an unfair advantage by bringing up my past history that had been buried these many years. Having spent considerable time on the frontier where it was considered the height of indiscretion to inquire too closely into one's business, the idea did not appeal to me. However, upon further consideration, it seems the retelling of the early days in the Service is desired largely for educational purposes.

This story so far as my part is concerned begins some twenty-eight years ago. Having spent some time in following the pursuits of a "cow person," as Ma Petengell terms it, and devoting several years to Buffalo Bill's Wild West Follies where Anna Oakley and Johnnie Baker, champion shots of the country, appeared as headliners, and being of a roving disposition, I was looking around for other pursuits to follow.

It was about this time that the Alaskan gold excitement began to percolate into the more remote regions, and I was seriously considering going to Alaska to make a speedy fortune and lead a retired life. My mother strongly opposed these plans because she did not wish me to go to such a cold climate, preferring that I remain in Wyoming where the mercury seldom goes below 50°.

After severing my connections with Buffalo Bill's outfit I worked for a short time for Governor Beck. It was during this period that the Governor informed me he knew of a good job for which he was going to recommend me. This job proved to be Forest Guard on the the Shoshone Forest Reserve. This was the first area set aside by President Harrison in 1891, less than 30 days after he had been given authority by Congress. Additions were made by President Cleveland who also established several other reserves in other Western States. It was during Cleveland's administration that forestry came into public attention more than ever before. This resulted in securing an appropriation for protection and administration.

Senator Clark of Wyoming had no small part in securing this necessary appropriation, immediately following which one of Senator Clark's political constituents, Mr. A. C. Chamberlain, was appointed Supervisor of the Shoshone Forest Reserve and a few men were employed as forest guards. I doubt if these men ever had a very clear idea of what their duties were, although some of them made an effort to find jobs. Among those I have in mind was Frank Hammatt who was educated as a priest but took up the life of a cowboy and later was with Buffalo Bill's Wild West Show as chief of the cowboys for a long period of years. Hammatt was what you might call a "two-bottle" man, this being long before Mr. Volstead's day. He spoke seven languages fluently and when it came to profanity his vocabulary could be further expanded. Then there was Carl Sorenson who, like Hammatt and myself, had spent several years in trying to be a showman. Carl was a good rider and might have made an excellent Forest officer if the work could all have been done on horseback. Then there was Ben Thompson. Ben had come West from West Virginia to lead the life of a cowboy but found the work of a forest guard more attractive. He was very progressive and would undoubtedly have made advancements had he not been caught by the superintendent holding down two jobs simultaneously which resulted in his sudden resignation and departure for Alaska where he served as United States Marshall at Fairbanks for several years. I also call to mind another guard by the name of Ed. Hunter. Ed's district took in an area south of the Yellowstone Park where he spent long periods of time alone. He was a man of fine physique, being over six feet in height; had unlimited courage and endurance, and was an expert on snow shoes. However, his aggressive disposition caused the question to arise as to the ownership of some cattle. This resulted in the sheriff of Tetone County taking Ed into custody. However, he talked the sheriff into attending a dance at a ranch located on Snake River, and while the sheriff was tripping the light fantastic Ed swam Snake River at flood stage and departed for parts unknown. I have since heard that he later became one of Idaho's prominent citizens. There was another guard by the name of Sherwood. He had formerly been a county surveyor in Michigan and came West to make his fortune. Aside from wearing his badge on the front of his hat and getting lost at every provocation, he was a good man. We also had Forest Inspectors in those days, one of whom, Mr. W. H. B. ("Whisky High Ball") Kent, I still recollect vividly.

In 1902, Mr. A. A. Anderson, a New York artist who owned a large ranch on the Upper Greybull River, was appointed Special Superintendent of the Forest Reserves surrounding the Yellowstone National Park. Immediately W. H. Pierce, commonly referred to as "Dad" Pierce, who owned a stock ranch on Greybull adjoining Mr Anderson's, was appointed Supervisor of the Shoshone. Active steps were at once taken to increase and improve the administration of this reserve. Anderson being very wealthy, spent the summers at his Wyoming ranch and the winters in New York City. He soon became greatly disliked by the local people on account of his high-handed action. This was offset to some extent by the high esteem the local people had for Supervisor Pierce.

Mr. Anderson was not in favor of the economic use and development of the forest reserves but thought they should be used as recreation and hunting grounds. He had a great dislike for sheep and had them removed from the reserve. On at least one occasion he mobilized the Rangers and drove several bands of sheep off of the reserve. Such action was greatly resented locally and did much to increase hostilities against Government Supervision. Supervisor Pierce probably did more than any one else in preventing hostilities from reaching the breaking point. through his wide acquaintance and personal friendship among the local stockmen.

Several additions were made to the Shoshone Forest Reserve from time to time. This resulted in numerous changes in the reserve boundary lines and necessitated field examinations to determine practical boundaries. L. A. Barrett, now Chief of Lands in District 5, spent the summer of 1903 in examining and determining the boundary lines of the reserves around the Yellowstone Park. I have a vivid remembrance of my first meeting with Barrett as his visit to my district resulted in my having to locate and post 75 miles of forest boundary, - all this work being done with the small ranger's compass. While the accuracy of the work might be questioned, since the pacing was done largely on horseback, no difficulty was experienced in making our lines tie in properly, as we were most generous in allowances for discrepancies.

With the ever-increasing administration and supervision of the Forest Reserves, the demand for other forest uses increased, especially in timber sales, free use of timber,and special uses of various kinds. This involved a tremendous amount of work by the Rangers owing to the cumbersome forms used by the Interior Department, the lack of instructions as to proper procedure, and the necessity of doing all office work in long hand, - this being before the Rangers were supplied with typewriters. Every single transaction (such as a permit for the free use of timber), required at least three different forms with from three to five copies of each form, thus consuming a great amount of time that might have otherwise been observed as Sundays and holidays, or used as annual leave.

Rangers were required to furnish quarters, saddle and pack horses, camp and other equipment at their own expense, the number of horses varying from five to fifteen head per man. This was before the day of forage allotment or paying Ranger's expenses while away from headquarters; so he had to meet these as well as other expenses from his magnificent salary of $75 per month. However, Rangers were able to save more under those early-day conditions than they can now under present conditions and a greatly increased salary. However, with better legislation and increased appropriations, rapid progress was made in improving conditions of the field men; living quarters were provided and working tools supplied as rapidly as possible. One of the first tools supplied me by the Government was an ax. It was selected with great care as to shape and weight, and was only used on special occasions. Much time was spent in keeping it in razor-sharp condition.

One of my first District Ranger assignments was in Sunlight Basin. I went to the district in mid-winter, expecting to find a ranger station with a suitable house to live in. You can imagine my surprise when I found that the station consisted of 160 acres of land enclosed with a pole fence with no house or other buildings whatever. To make matters worse there was about a foot of snow on the ground, with the temperature below zero. Some time was spent in making a complete survey of conditions and trying to decide whether the Government could dispense with my services. The fact that I am writing this review is sufficient answer as to my decision. A number of homesteads had been taken up and improved in this valley but later abandoned. Since this occupancy was in trespass I spent the rest of the winter in commandeering and moving several of these ranch buildings onto the ranger station, and by spring had a fairly well equipped station. This caused some dissatisfaction among certain residents of the valley as some of them claimed the buildings. This, however, subsided after several unsuccessful attempts to have me arrested.

The transfer of Forestry from the Interior Department to the Department of Agriculture and the granting to rangers of police authority in 1905 did much to improve conditions, especially in the field. Probably no single act in the history of the Service has been of as much importance in building a sound administrative policy.

In the spring of 1907, through no cause of my own, I was advanced from Ranger on the Shoshone to Supervisor of the Medicine Bow National Forest in southern Wyoming. After disposing by sale and gift of our small possessions (I having acquired a wife in the meantime) we packed a few articles in two small boxes which we shipped to Saratoga, Wyoming (the boxes arrived 13 months later). On arriving at Saratoga I found a fairly well equipped office with excellent office and field personnel, but instead of having one Forest I found there was the Sierra Madria, and the Crow Creek Military Reservation in addition. The Service had just made its first big timber sale of 165 million feet on the Medicine Bow to the Carbon Timber Company. The Sierra Madria (later changed to Hayden) had just been established and had to be put under administration.

The next two years were certainly hectic and my time was well taken up with the constant string of visitors from the Washington office and elsewhere trying to see how a big timber sale was or should be handled, and in trying to convince the sheepmen on the Sierra Madria that a heavy reduction must be made as forage could not be provided for the 325,000 sheep permitted. Spare moments were taken up in investigating a large timber trespass against ex-Senator Teller of Colorado, extending over a period of several years.

The Carbon Timber Company was finally convinced that its timber sale contract meant just what it said and must be complied with. The sheepmen learned for the first time that all sheep must be counted before going into the Forest and that reductions were inevitable. And Mr. Teller found it advisable to settle his trespass case, although the settlement was for far less than the estimated values.

In the fall of 1908 I was instructed to proceed to Washington, presumably for detail, but on arriving there, was advised that I had been selected for Chief of Grazing of District 2 in the new District organization that was then being organized. I asked for time to consider this offer and finally accepted with a great deal of hesitancy as it seemed doubtful if any one could give satisfaction to the Service and the stockmen of that District, considering the general dissatisfaction that prevailed, particularly in Colorado. The first winter was spent in listening to grazing complaints and the following summer was devoted to investigating these complaints on the ground and rendering immediate decisions before leaving the area involved. This plan proved so satisfactory that it was followed for the next few years with very gratifying results.

In December, 1914, I went to Washington on detail and while there a vacancy occurred in the Office of Grazing through Mr. Kneipp's going to District 4 as District Forester. I was offered and accepted the position of Inspector of Grazing in the Washington office. This required long field trips in visiting the various Districts, necessitating being away from my family for long periods which neither my wife nor myself considered desirable, so I gladly accepted a transfer to District 5 as Assistant District Forester in charge of Grazing when the opportunity presented itself in 1921. I have held this position since that time.

YE EDITOR DISCOVERS

Two articles in his basket that gave him a few moments of delight. One was on Ranger Bill, a twenty-five-year man, the other by Ranger Reyes, a twenty-eight-year man. When you read "Ranger Bill" you will appreciate why his writings have been a source of satisfaction and chuckles and succinct wisdom for many years.

Let's hear from some more old timers.

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The eleventh annual meeting of the Southern Forestry Congress will be held at New Orleans on April 4 and 5. April 6 will be a field day held at Bogalusa, La., where the Great Southern Lumber Company will be host. The program announced by B. F. Smith, President of the Congress, includes sessions devoted to the most important forest problems of the South - fire protection, taxation, timber growing, management of the farm woodland, and selective logging in Southern hardwoods. Major Stuart will be the principal speaker at the opening session, discussing "Our Need For Forests." Other Forest Service speakers will be Carlile P. Winslow, Director of the Forest Products Laboratory and Fred R. Fairchild of New Haven, Director of the Forest Taxation Inquiry. The program also includes addresses by Governor Long and Senator Joseph E. Ransdell of Louisiana.

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John Hanley of the Central States Experiment Station and Luther Schnur of the Allegheny Station are completing details in Washington in the Section of Forest Measurements in connection with the preparation of volume tables for the growth studies of the Upland hardwoods. This study is one which involves practically all the eastern hardwood forests, including the preparation of volume tables for more than 30 species which grow in mixture with the oaks. This study is perhaps the most capacious and extensive of its kind that has ever been attempted anywhere on account of the area involved and the difficulties due to the geographic location and the large number of species concerned. The project has been under way now for 4 years and will last at least two more years.

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H. B. Wales, of the office of Forest Management D-3, and J. A. Mitchell, of the Lake States Forest Experiment Station, are in Washington on short details to the Office of Forest Experiment Stations. They are helping to clean up the accumulation of winter work and to assist in the administration of the office.

PHILIP PATTERSON WELLS

Philip Wells, Assistant Law Officer of the Forest Service 1906-7 and Chief Law Officer 1907-10, died at San Francisco, March 12. He was taken ill with pleurisy in Washington last November, but by early February had recovered sufficiently to undertake a sea-voyage of recuperation. Beyond the fact that a streptococcus infection was the immediate cause of death, the circumstances of his final illness are not yet known in Washington.

Wells has been one of the master minds in the conservation movement. His contribution to the upbuilding of Forest Service policy in the initial critical years was very substantial. Nor did his contribution cease when he withdrew from the Service. His enlistment with conservation was for the duration of the war, not for a limited term. To his inborn spirit of public service the principles, purposes, and ideals that underlie the Forest Service made the strongest kind of appeal. His death not only removes a veteran from our graduate roll but takes a stanch and active supporter from the number of our associates, a keen and highly trained mind from our larger counsels, and a warm-hearted friend from our companionship.

"Phil" Wells brought to the Forest Service both high powers and a very exceptional preparation. He came as though made to order for the work. He was born in Grand Rapids, Mich., February 5, 1868. At Yale he was a class mate of Gifford Pinchot, George Woodruff, T. G. Shearman, and H. A. Smith, all later members of the Forest Service together. He was the outstanding man of his class in economics; incidentally it may be mentioned that he was also stroke of his class crew. After two years of graduate work in political and social science he studied law and in 1893 was admitted to the Connecticut Bar and began practice.

Three years later he became the Librarian of the Yale Law School and continued in that position until appointed to the Forest Service. He received the degree of Ph. D from Yale in 1900, was instructor in evidence in the Law School 1898-99, and was lecturer in history, Yale University, 1902-1906 He was also engaged in writing, editing, and translating for publication legal, historical, and bibliographical matter in very considerable volume.

Woodruff and Wells were together the principal counsel of Pinchot's conservation movement. Woodruff became Law Officer of the Forest Service in 1903, and in 1906 Wells joined him as his first assistant, becoming Chief Law Officer the following year upon Woodruff's appointment as Assistant Attorney General. To both of them is due the credit for having started off National Forest administration on a legal basis so soundly laid that there has never been a successful attack upon the constitutionality or legality of any part of the program.

One of the most difficult and important questions with which Wells had to deal as Law Officer of the Forest Service was that of water power. The fight inaugurated by the Forest Service for Federal control of water power development involving the use of lands of the United States did not end until enactment of the Federal Water Power Act in 1920. Throughout the period Wells played a very large part in divising and bringing to final enactment this vital piece of legislation. During most of the period while this and the other conservation laws relating to the public lands were under debate Wells was working in close association with Pinchot, as counsel for the National Conservation Association – for Wells left the Forest Service when Pinchot did; but from 1911 to 1913 he acted as special adviser to the Secretary of the Interior on legal and economic problems relating to conservation, under appointment as Chief Law Officer of the Reclamation Service.

Though engaged for some years in the general practice of the law in Washington, and later in Middletown, Conn., where one of his ancestors had been among the earliest settlers and where he owned the farm and homestead that has come down in the family from Colonial days, his major activity and interest were always in public affairs. Soon after Pinchot became Governor of Pennsylvania Wells was again drawn into official work with Pinchot and Woodruff, who had become Attorney General of Pennsylvania. As Deputy Attorney General Wells had special charge of the development of the State's water power policy and kindred matters, serving as Chairman of the Pennsylvania Giant Power Board, Counsel of the State Water and Power Resources Board, and Commissioner of Pennsylvania to negotiate the Tri-State compact for control of the Delaware River. After the close of Governor Pinchot's administration in Pennsylvania, in 1927, Wells continued in close association with him as legal and general adviser in connection with conservation activities.

The service summed up in such a life is not of the kind that attracts wide notice and brings large personal rewards, either in popular recognition or in emoluments; but it is enduring in its results and may constitute a really notable contribution to the national life and progress. In Wells' case it does. Part of his work went into the building of the structure of the Forest Service, just as there is going into that structure all the time the work of all of us. We are proud to think of it as a monument that we have helped rear, though our names do not stand forth prominently upon it and our own specific contribution to it blends in the mass and soon becomes indistinguishable even to ourselves. And so, too, in large measure it has been with Wells' work outside the Service. Those who have been closest to it can feel he had the right to the contentment that should come to one who has done valuable things, whether they are recognized or not. But those who have been closest to him will not make that the last word.

He was a man of the noblest loyalty, the broadest, most responsive sympathy, the finest friendliness, – true to the core, without egotism, large souled; scornful of all meanness, seeking the best. His going means a serious loss, from a public standpoint; from that of his friends, the making of a vacancy that will not be filled. ———H. A. S.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII, NO. 13 WASHINGTON, D. C. APRIL 1, 1929

B.475 [illegible]

"RANGER BILL"

1901 - 1929

Probably no officer of the Forest Service, except the Chief Forester himself, is better known to the rank and file of our organization than "Ranger Bill," whose stories and broadcasts have done much to popularize the Forest Ranger and the National Forests in the eyes of the public. But so well has Ranger Bill kept his identity hidden that there are many men and women in the Service who even to day do not know the originator of this character. Practical, business-like Uncle Sam has no such person on his payroll, but if you will look under the "H's" in the roster of Government employees you will find this name: Wallace I. Hutchinson, Assistant District Forester, California District, U. S. Forest Service. For more than a quarter of a century - but let Ranger Bill tell his own story:

"It was way back in June, 1901, when I was a tenderfoot just out of college, that a friend of mine in the old Bureau of Forestry talked me into joining a reconnaissance party that was touring the East and measuring up all the white pine groves they could find between Atlantic City, N. J., and Lake Winnipiseogee, New Hampshire. I hired as student assistant and cook of the party - that last title bringing me in 20 extra bucks a month, though the joke of it was we never had a tent or cooking outfit and lived at hotels all summer. By fall I had accumulated the magnificent sum of $96, and as the work had been interesting and Yale had started a forest school the year before a bunch of us decided to see if we could pick up some forestry education. So we put in two years at New Haven, working for the Bureau in the summer, and slinging hash, stoking furnaces, and running laundry routes in the winter, to get something to go into our stomachs along with the silviculture we were cramming into our heads.

"In 1903 we got our M. F. degree - which few of us would read because it was written in Latin, - reported at Washington and headed West. Wm. L. Hall was my boss those days, and I drew a party down in southern California that measured eucalyptus groves all summer, and then spent the winter wrangling burros, fighting rattlesnakes, and counting chaparral sample plots up in the Sierra Madre. Then they shot me to Nebraska to help survey out the Dismal River Forest Reserve. It was there my bronco stepped in a gopher hole and piled me up with a busted "clavical," and in the excitement the boys forgot to run out the last half mile of the east boundary - which fact wasn't discovered until some

15 years later. After that it was measuring catalpa groves in Nebraska, juggling telephone poles and giving them a creosote bath in North Carolina and Pennsylvania, with winters spent in the old 'bull-pen' at Washington. Those were the days of such friends and pals as G. P., Overton Price, Cap. Adams, Henry Grinell, Hosmer, T. P. Lukens, F. G. Miller, 'Pop' Lull, 'Shorty' Kelleter, Chas. Scott, Billy Mast, Schfersee, 'Bummer' Ayres, and a lot of other fellows who have long since crossed the Great Divide. The Bureau had part of the 7th floor in the old Atlantic Bldg. on F St. as offices, and an appropriation just about big enough to pay for putting out a good forest fire now-a-days.

"The Philippine 'bug' got me in 1905, so I beat it for the Islands and worked there under Major 'Patsy' Ahern for several years, along with Merritt, Whitford, Curran, Kobbe, Pray and Zschokke. My station was down at Zamboanga, 760 miles south of Manila and a few degrees off the equator, where I was forester for the Island of Mindanao and Jolo Archipelago - a little district of about 25,000 square miles with a lot of Moro tribes and a coast line longer than the Atlantic seaboard of the U. S. It was interesting and exciting work, and healthy, too, providing you took a good sweat every day and cut out everything but singing. Many's the trip I took into the wild country - 2 to 4 months without seeing a white man; cruising timber, fighting mosquitoes, ants and leeches, attending native feasts, and every once in awhile joining the Mohammedan religion so as to be sure of keeping a head on my shoulders.

"Climbing mountains was 'vacation' those days - not just riding or hiking up to a high peak, but cutting your way foot by foot through the dense tropical jungle. Two of the peaks we scaled, both over 9,000 feet, had never been climbed by white men. But it was on the Mt. Malindang hike we got a real thrill. When we'd nearly reached the top it came on and rained for two weeks without a let-up of more than a couple of hours at any time. The rivers went 'boom' and we were cut off from our base of supplies. But we had to eat, - and we did, - ferns, palm hearts, parrots, mountain rats, and, near the end of the return trip, a monkey. You'll find the skin in the Smithsonian if you look for it.

"On one timber cruising trip I found a new tree species in the jungle - not an unusual event in those days - and 'Posey' Merrill of the Bureau of Science, now Dean of the College of Agriculture, University of California, gave it the highfaluting name of *Hydnocarpus hutchinsonii*; but I figured I could live that down. It happened though in after years that this tree proved to be one of the few species in the world which yield Chaulmoogra oil used in the treatment and cure of leprosy - so even the little things in a forester's life may sometimes count for more than he thinks.

"Long about the end of 1908, just a few months before we were planning to leave the Islands for home, my pal Harry Everett was killed by the natives, - and after that, - well, 'the spell of the Orient' was pretty well busted as far as I was concerned.

"I wandered around for about a year, on leave, before I got back to 'God's country,' studying forestry and taking in the sights in Asia, northern Africa and Europe - most everything from the scarlet tinted maple forests of Japan to the crown jewels in the Tower of London. It was rubber, teak and pagodas in Malay and Burma; deodar, sal, mountains and temples in India; and pine, spruce, hardwoods, art galleries, cathedrals and 'bier gardens' in France, Germany, Austria and Switzerland. There's sure a heap of strange and wonderful sights in the little old world, but to me the most beautiful and wonderful of all was Mt. Kinchinjunja (28,156 feet), the Queen of the Himalayas, as she rises superbly out of dense tropical forests to peaks of everlasting ice and snow.

"On to New York and Washington and off for the West again - back to the good old Forest Service once more. This time I landed on the Pike Forest in Colorado and later took charge of the San Isabel. In 1915, District Forester Smith Riley called me in to the D. O. at Denver and there we started the Office of Educational Information - now called by the less tongue-twisting name of Public Relations. After that it was Washington in 1920, where the Ranger Bill sayings and stories first saw the light, and then in 1922, after 13 years of persistent effort, to the Golden State.

"A lot of water has run under the bridge since the Old Bureau of Forestry days in 1901, and times have changed a heap, but the old spirit of pioneer forestry times still lives on. I am proud to have served under such men as Chief Foresters Pinchot, Graves, Greeley and Stuart, and District Foresters Riley, Peck, Redington and Show. But the greatest reward of all is to count as my friends a host of Forest Service men and women who I hope will always have a kindly feeling in their heart for their old pal, Ranger Bill."

TWENTY-EIGHT YEARS ON ONE RANGER DISTRICT

By Jacinto D. Reyes, Santa Barbara.

My father, Rafael Reyes, was born in the city of Los Angeles in 1834, one of a family of five boys and five girls. They owned the Triunfo Ranch, a Spanish grant on which they raised stock. In 1854 feed was short and my father and his brothers drove 2,000 cattle and 1,000 horses by way of Tejon Pass to the head of the Cuyama Valley and settled at the mouth of Reyes Creek. In 1870 my father married Maria Y. Garcia Ortega from Ventura-by-the-Sea. I was born in 1871 in Ventura, and went to school there until I was 16 years of age, when I came to the ranch in the Cuyama and have lived here ever since.

I entered the Forest Service about September 1, 1900, when the forests were being administered by the Department of the Interior. The Santa Barbara was, at that time, under the direction of Forest Supervisor Willis M. Slosson. My first appointment was on a temporary basis for a three months' period at a salary of $60 per month. However, I was assured that if funds were available and my work was satisfactory that I would receive steady work, and on October 4 I received a permanent appointment and have been on duty as a Ranger on the same ranger district since that time. The boundaries of this, the Cuyama, District have changed several times and the boundary of the Forest has changed several times in its relation to my district, but in general the district is about the same as it was in the early days.

During the last twenty-five years the Santa Barbara Forest has been administered at different times as three different Forests, - the Monterey, San Luis, and Santa Barbara - but for the last ten or twelve years it has been administered as one unit. During my period of service I have served under six different Supervisors, among them Colonel Willis M. Slosson, C. E. Ratchford, J. R. Hall, Thomas W. Sloan, and C. E. Jordan, and at the present time, William V. Mendenhall.

When I started in the work under the Interior Department we had a very limited mileage of trails in the district. In fact, one primary trail of low standard that led across the Forest from my district to the town of Ojai was the most important, and the settlers in the upper Cuyama Valley obtained their supplies and mail by way of a pack train over this trail. The nearest town on the San Joaquin Valley side of the Santa Barbara that was of any importance was Bakersfield, but since that time oil has been discovered on the western edge of the San Joaquin Valley and the towns of Taft and Maricopa have sprung up where nothing but cattle grazed when I first moved into the country. The distance from my headquarters to Maricopa is approximately 37 miles, and we have a road to Maricopa that is passable most of the year, although it is simply a winding dirt road up the Cuyama River, crossing the creek many times.

Communication was practically nil when I went into the Service, and it required from a week to ten days to get mail from the Supervisor's office. Now, we have two telephone lines connecting my headquarters with Ojai and Santa Barbara. No fire lookouts were established until after I had been in the Service many years, and none were on my district until within the last six years. It is with a great deal of pride that I have watched the gradual development of the Cuyama District from the days when we were out of communication with the Supervisor's office and other Rangers for weeks at a time and had to handle our fire problems in the best manner we could, up to the present time when we have an efficient procedure for handling all of our problems and a good many more miles of trails, telephone lines, and other improvements that go toward making fire control more effective.

In 1901 when President McKinley was traveling in the West he was a visitor at Ventura, and Colonel Slosson called in all of the Rangers from the Forest and arranged for us to escort the President's carriage in the parade that was held in Ventura. We were introduced at that time to Secretary Hitchcock of the Department of the Interior and also to Secretary James Wilson of the Department of Agriculture, and both of them gave us a nice talk. In May, 1905, President Roosevelt visited Santa Barbara, and the Rangers were again called in and escorted President Roosevelt in the parade, and I had the privilege of riding my horse on the right side of the President's carriage.

When we first landed in Santa Barbara, as was customary when we were there on detail or for any other purpose, we registered at one of the commercial hotels with a moderate rate. Through the kindness of the proprietor of the old Potter Hotel, which was one of the finest hotels in the West at that time, and also through the strategy of Supervisor Slosson on the first morning after our arrival in the city we were invited as guests to take a suite of rooms at the Potter, and for the period that we were in town we remained there amid the glory and ceremony while the President was being entertained. We did not have to wear evening clothes; in fact all the Rangers appeared in double breasted blue flannel shirts and corduroy trousers on all occasions.

W. G. Greeley and W. G. Durbin, with P. T. Harris, came down in 1906 and cruised the timber on Mt. Pinos, and I had the privilege of working with them on this detail. In 1908, 1909, and 1910, and also in 1911 we did considerable experimenting in planting, both in seed broadcasting and bare root planting. In our 1908 experiment, it was necessary for us to transport the trees from Ojai on pack mules through to Mt. Pinos, and I packed approximately 10,000 trees over sixty miles on pack mules to the planting site, but unfortunately most of the trees were frost bitten before planting and there were practically no survivals. In 1909 we tried seed planting of Jeffrey pine on the San Guillemo Flats, planting approximately 500 pounds of seed. Most of these started very well, but they did not survive the first dry summer and the experiment was practically a total loss. In 1910 about 22,000 two year old pine trees were planted on the slopes of Horne Canyon back of Thacher School. These trees were raised in the Los Prietos nursery on the Santa Ynez River, and a few of them are still alive where they were located in protected and favored spots, but the experiment as a whole was a failure. In 1910 we built a lath house in Horne Canyon and established a nursery, and thousands of trees were successfully raised there.

The record of fires that have occurred on the Cuyama district and on adjacent districts that have been disastrous during my period of service might be simmered down to a few that I will list - the Matilija-Wheeler Springs fire of June, 1917; the Branch Canyon fire of 1921; Branch Mountain and Kelley Canyon fires of 1922. I also took part in the Tujunga fire in 1919, which started on the Saugus District of the Santa Barbara forest and burned over into the Angeles, covering 70,000 or 80,000 acres. During the Wheeler Springs fire in 1917 the crew that I was working with had a real battle to save the buildings at the Wheeler Springs resort, but while we were busy doing that the fire was burning out of the forest and into the town of Ojai. Many buildings, both homes and barns, and other improvements were lost. In 1921 when we had two serious fires, the Branch Canyon and Big Pine, I had a continuous service of thirty-five days' fire fighting, and in 1922 had four weeks' continuous fire fighting.

It might be interesting to mention the fact that I have a pack and saddle mule that has been in the Service with me since 1907 and is still going strong. In 1908 the mule bucked me off when I was returning from a fire and this laid me up for about three weeks. This is about the only occasion I have ever been disabled and unable to work. Supervisor Slosson said I must have been asleep at the time, and this was probably true as I had been on the fire line for several days and had lost considerable sleep. I do not believe the mule would have unloaded me if I had been wide awake. This same mule was somewhat opposed to packing a heavy galvanized water tank to Reyes Peak in 1925 and emphasized the opposition by taking a bite on my leg that gave me some trouble.

During all my period of service I have never occupied a Government owned ranger station, having lived in my own home within the Forest a good portion of this time and at our home ranch previous to the time I built my home.

ROSES AND NATURAL AREAS

By G. A. Pearson, Southwestern For. Expt. Sta.

Kneipp's article "A Rose by Any Other Name" in the February 11 issue of the Service Bulletin discloses a conception whose existence I have surmised, although I was not looking for it to emerge from the Branch of Lands. This article seems to overlook the fact that we are dealing with two or more species of the genus Rosa. For the purpose of this discussion it is sufficient to recognize only two: one commonly designated "wilderness area" but including the subspecies "primitive," "virgin," "recreation" etc. and the other simply "natural area" with no subspecies or varieties.

It is possible that the ideas back of "wilderness area" and "natural area" respectively may have a common origin, but, if so, the process of evolution has carried them a considerable distance apart. The "wilderness area" is a place where the tired business man may go to forget his troubles; the "natural area" is a place where the tired scientist goes to work. Whatever features the two types of area may have in common are largely accidental. The wilderness advocate wants to get away temporarily from all conventional things - people, automobiles, and modern ways of living. To attain this end, he turns to remote places difficult of access by the common herd. He wants a territory large enough to permit him to roam around for days without coming into contact with the things he is trying to avoid. He is not concerned with the type of forest, the fauna, or the geology so long as it affords him solitude, variety of scenery, and certain essentials such as water, trees, and mountains. The biologist who is out for recreation will enjoy the wilderness area, but professionally he is more interested in what he calls the natural area. He may have to go off the beaten paths to find the type of natural conditions he is seeking, but he is not taking a two weeks' pack trip if he can accomplish the same thing in a day's journey by automobile, nor is he going to camp out under a tree if a good hotel is available. Usually he is not satisfied with just any kind of natural area: he is looking for an area representing some particular type of forest, plant, or animal community in an undisturbed natural state. This type of area will appeal to the average nature lover, but it will not satisfy those who crave wild-west life in large doses.

In District 3 a clear distinction between wilderness areas and natural areas is recognized. Several large wilderness areas have been approved or recommended, and some 25 selections of from 40 acres to several sections are being considered as natural areas. The former have been located without reference to forest types or other plant associations. The natural areas represent important types of vegetation such as grasslands, giant cactus, desert shrubs, live oaks, Arizona cypress, Apache pine, pinon-juniper, western yellow pine, Douglas fir, Engelmann spruce, Alpine heights, and canyons containing a wide range of species.

As to names, no important differences of opinion have developed in District 3. "Wilderness" is generally accepted for the large recreational type of area. Inasmuch as logging is to be allowed, the names "natural," "virgin" or "primitive" would not apply. These names fit the type of area desired by the biologist, but they have no advantage over the term "natural" which has been accepted and is generally understood by scientists.

YE EDITOR DISCOVERS

The receipt of a well prepared, beautifully illustrated, and carefully bound copy of the recreation plan for the Santa Fe National Forest indicates that D-3 also has joined in the movement for a systematic and planwise development of its recreational areas. When it comes to scenic beauty, historic interest, good fishing, abundant game, and delightful climatic conditions, the Santa Fe Forest is hard to beat and it draws patronage from points as far south as New Orleans and as far east as the Atlantic Coast. The establishment of a high standard of recreational planning for the Santa Fe is therefore a matter of more than local interest; in fact, it is a PR activity of widespread extent and effectiveness.

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Out of the total allotment of printing funds to the Forest Service made by the Department at the beginning of the fiscal year amounting to $50.000. $39.636 has been obligated. When the California map folder is sent over to the Office of Publications the allotments for map folders, research publications. and publications of the other Branches will be practically exhausted, leaving only about $8,000, all in the administrative printing fund.

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With the additional $14.320 provided by the Agricultural Appropriation Bill for the next fiscal year under authorization of the McSweeney-McNary Bill. Range Research is planning to enlarge its work in the Intermountain region in Utah. Nevada and southern Idaho. The Great Basin Range Experiment Station which has been handicapped by lack of funds in the past will be enabled to handle its current work more effectively. It is expected that the spring range problem will receive intensive study. Some of the funds also will be used in the study of the relation of herbaceous vegetation and its utilization by livestock to erosion and runoff. The additional $14.320 is the first appropriation for range research under the McSweeney Act. The McSweeney program provides for gradual increase in all classes of forest research, including range research. If this plan is carried out approximately $25,000 additional will be available each year for enlargement of range research work. largely in the West.

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Thirty two States have asked us for Forest Week material. These requests came chiefly from State Foresters and Extension Foresters, but there were some from associations and clubs of various kinds. Fourteen States have indicated their intention of concentrating on a particular time for the educational work that they will carry out this year. A number of them are centering the observance about Arbor Day. In some States the emphasis is on State forestry problems, in some it is on tree planting and related subjects, in some it is chiefly fire prevention. A considerable number of those asking for material have indicated that they propose to use it in educational work spread out over a considerable period. The Forester has sent out a circular letter to all State and Extension Foresters and to all those who acted as State Chairmen during the observance of American Forest Week during previous years, and to the various organizations that took part, explaining that this year Forest Week is on a local basis, each State deciding whether it will observe a week and choosing its own date.

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It's just natural, we guess, to hate to say anything nice about an outfit that is really nice and really good but insists on bringing you to a realization of the fact. Yes, we have outfits of that kind, and California is only one of them. We have had the pleasure of reading the articles on "Twenty Five Year Men" which the California District has sent in. Don't fail to hunt them down in the Bulletin and read them. It's like - well - a log fire, a winter's night, a good book and a dhudeen.

We thank District 5.

AMERICAN FORESTRY MEETING

Featuring the modernization of forest growth, utilization, and expansion through the adoption of new codes in the matter of forest protection and management the annual meeting of The American Forestry Association was held at Jacksonville, Florida, February 27, 28, and March 1, jointly with the Florida Forestry Association.

Members and delegates from more than twenty-five States were told of the necessity for changes in the southern practice of woods burning and its devastating effect on tree growth, wild life, and soil fertility.

Dr. Charles L. Herty, of the Chemical Foundation, New York, internationally recognized for his studies of the chemistry of tree life, prophesied a new era for the South in the manufacture of paper from its fast growing and abundant stands of slash pine. In Dr. Herty's opinion the paper industry which now goes into California for its spruce will soon turn southward and will find in the slash pine the machinery for a revolution in the industry.

Modern methods of reclaiming waste, cut-over, and burned land in the South were graphically illustrated by Ralph W. Gwinn, Vice-President of the J. C. Penny-Gwinn Corporation, New York. Under Mr. Gwinn's direction many thousand acres of such land in northern Florida have been turned into valuable timber and turpentine areas.

Associate Forester, E. A. Sherman, speaking on the place of forestry in the land problems of the new era declared that we are entering an era in which lands will be more efficiently utilized, our country better organized, and each region more thoroughly specialized. We are no longer attempting to scatter agricultural settlements promiscuously through regions primarily forest where one man's selfish desire to use the property of others for free range leaves him to burn the woods and nullify the efforts of the whole community. Our forest units will, in the new era, be larger and more compact. Conversely, our agricultural units will be more throughly developed and farm and forest activities will be synchronized to the benefit of both.

Other speakers included Dr. David Fairchild, Senior Plant Explorer, U. S. Department of Agriculture, whose subject was the importance of preserving portions of the Florida Everglades; Harry Lee Baker, State Forester of Florida, who told of the possibilities of the fireless South; Mr. I. T. Quinn, Chairman, National Game Conference, whose subject was wild life as a southern asset, and Mr. E. L. Demmon, Director of the Southern Forestry Experiment Station, who gave an instructive and inspirational demonstration of fire and forest growth.

LOTS OF BULL - BUT NO BOLOGNY

By Emma H. Morton, D. 6

Even in the summer there are some mighty bad roads on the Siuslaw up through the Coast Range mountain country, but in winter - well, they practically pass out of the picture and so do the settlers living alongside of them. One enterprising rancher, y-clept Olaf Dahlin, rebelled against this enforced 90-day seclusion. Casting about for a way out, his thoughts turned - not to old Dobbin - the mud was too deep even for him - but to Bruce, his trusty harness bull. A 1929 model two-wheel cart was rigged up and thereafter Olaf sallied forth from his homestead whenever the call came either to transact business or pursue pleasure, with the satisfying knowledge that while not speedy his transportation was sure in spite of grades, mud, highwater (and that picturesque word which usually precedes it).

The fame of the team soon reached Assistant Ranger Lewis H. Neff, also stationed in the muddy, good-roadless section, who thereafter pressed Bruce into service to transport himself and supplies from the station to various parts of the district.

On one of these trips, (Neff claims) an enterprising photographer from Florence, passing casually, spied the trio, Bruce, the Bull, Lewis and Olaf, and made a feature picture and write-up for the local papers.

It was a stunning picture, and perhaps the photographer did just happen by, but it looks from where we sit like the most subtle brand of Public Relations. The photograph was published in the county papers with the statement that the roads were so bad it took a lot of bull to get over them.

An old Chinese proverb runs to the effect that one good picture tells more than 10,000 words. If that's true, we'll wager that after seeing the rancher's cart outfit, et al, the men who have the say-so will spend some money on those roads in Neff's district next year!

The pity is we didn't get the picture in time to submit last fall along with our book of Improvement Photographs to the powers back in Washington.

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District 2 has received a good supply of the four technical bulletins on the Rocky Mountain species, in response to the request that appeared in a November issue of the Service News, and wishes to take this means to thank the many Forest officers who responded to their request for these publications.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 14 WASHINGTON, D. C. APRIL 8, 1929

IMPORTANT PERSONNEL CHANGES

By R. Y. Stuart

I am very glad to make the following announcement of important changes in Service personnel:

District Forester Fred Morrell has been selected as Chief of the Branch of Public Relations to succeed the late J. Girvin Peters. Mr. Morrell brings to the position a background of field experience, large administrative responsibilities, and broad contacts which will be of invaluable service in his leadership of this Branch with its nation-wide activities.

Major Evan W. Kelley has been selected as District Forester for District 1 to succeed Mr. Morrell. Major Kelley is a seasoned field officer, able administrator, and an experienced District Forester of proven ability and capacity.

Forest Inspector Joseph C. Kircher has been selected to succeed Major Kelley as District Forester of District 7. Mr. Kircher has attained this position by continued meritorious service over a period of twenty years in varying capacities as Forest, District, and Washington officer.

I bespeak for these men the full cooperation and support of their Service associates.

TWENTY-FIVE YEARS - AND THEN SOME

By Wm. M. Maule, Mono.

While I was a student in the Cornell school of forestry in June, 1902, our eminent Dean, Dr. Fernow, told us that Major Geo. P. Ahern, Chief of the Philippine Bureau of Forestry, wanted more foresters; so two of us took the Civil Service examination and in October of the same year sailed for the Islands.

Twenty-two days on the Pacific, over glassy seas and through a severe typhoon off the Japanese coast, brought us to Manila where the genial Major and his assistant, R. C. Bryant, described our duties.

We were sent to the jungles of Bataan for seven months. With two bull carts loaded with provisions we followed on foot over native roads and through sweltering heat. Toward evening we decided to shoot some pigeons for supper; at the first shot, the carabaoes pulling our belongings suddenly "went into high" and the end of a long chase was the banks of the Colo River where we found them meekly cooling off, with our provisions sadly waterlogged. Our native vocabulary then consisted of only two words "paparron" and "galing" which used together commanded the native to come and go simultaneously. This was soon found inadequate, since the average Filipino is not prone to do either.

After seven months of solitude we returned to Manila to tell what we had been doing. I was then assigned as Forester to Bataan and Zambales Provinces with headquarters at Subic. This was close to Olongapo where I made the pleasant acquaintance of many officers, a number of whom later took an important part in the World War. Late in 1903 I was transferred to Manila and placed in charge of the forests of seven Island provinces.

About this time a new consignment of foresters arrived from the "States" and we were glad to welcome Hutchinson (D-5), Merritt (D-8), and Kobbe who astounded the natives by arriving in cowboy regalia, chaps included.

Aside from supervision of timber cutting, considerable time was devoted to studies and control of native practice of making small clearings in forests. This I briefly described in "Forestry and Irrigation," also a paper on the Benguet pines. Studies of charcoal manufacture was treated in Bulletin No. 2 of the Bureau, English-Spanish.

In conducting control of clearings, frequent arrests were made which were resented by many of the forest natives. On one occasion I was confronted with a bolo man all "primed to do his stuff." The carving process was allayed on his getting a cross section view of my Colt 45 which I didn't have to hold long enough for him to observe its vibrations.

Four years were spent in the Islands, and the greater portion of the day preceding my departure was spent in securing prescribed releases necessary for all American employees. These were from the Treasury, Bilibid Prison, and the Bureau of Health to show that we were O.K. financially, morally and physically.

I was rather apprehensive in one respect, since in order "to clear" in the limited time available a native chaise and driver were employed, and in my haste at the last, with "4 minutes to go", I gave too stiff a pull to the sleeping driver's shirt-tail, worn outside his trousers, which left him practically naked. He was ameliorated with 25 cents Mex. while I sped on foot for the steamer launch, leaving him either satisfied or in mind to call the police; I didn't wait to see.

While my work in the Islands was of great interest, the homeward trip proved even more so.

First to Hingkong with plans for a trip to Canton frustrated because the previous boat had been badly used by Chinese pirates, to which matter a gunboat was giving attention. Thence to Singapore, Penang, Colombo, with interesting side trips; westward through the sweltering Red Sea to Aden and through the Suez Canal, across the Mediterranean, past Stromboli, just before day break with a red tongue of lava pouring into the ocean; landed at Naples and climbed Mt. Vesuvius, which had gone through a severe eruption a few months previous; to Rome, Florence, Venice; then north via St. Gothard into Switzerland; to Paris, London and other English cities, and finally to New York.

Following a brief vacation on my return to the United States in 1907, I was appointed Forest Assistant, and, after about one month in the Washington office reported to Supervisor Bill Greeley on the Sierra South (now Sequoia) National Forest in California.

The route up to Hot Springs was typical of the stage roads of that day with "Old man" Guinn the driver, with his long whiskers, punctuating his steady course of questions and information with liberal floods of tobacco juice as we slowly crept up the dusty road. The other passenger was chiefly concerned in lowering a quart of "sheep dip" which toward the end of the journey so confused his memory that he frequently mistook the muzzle of his six-gun for the bottle.

The summer of 1908 brought Dave Rogers to our pleasant group, while the Supervisor later ventured to bring his bride, who added much cheer to the place.

It soon happened that Billy Burton was due for a birthday dinner in which Dave and I were designated assistant cooks to Mrs. G., and a pie was the "piece d resistance". The usual filling was substituted with burlap sack discs cut with scissors, covered by a normal crust and baked. When Burton was required to sector it at the festive board our snickers kept him from fainting.

Late in the fall of 1908 Supervisor and Mrs. Sherman came to the Forest and soon won a warm feeling in the hearts of all.

On October 21, 1909, I was made Supervisor of the Mono National Forest, - but why bring that up!

In a brief comparison of present day conditions with those existing two decades ago, one is impressed with the fact that during this period, American forestry, which is distinct from that of other countries, has really come to its own. It has been built out of the raw product, started with a force of inexperienced young men who had but few tools to work with, and scarcely any precedent to guide them. The science, hewn out of the rough much as all other forms of pioneering, has at last led to logical courses.

We were practically without shelter, communication, or other means to carry on our work. Standards applying to much of our work, have been developed through experience and scientific study, but the end is not yet.

Through this development we feel a definite inspiration which has guided us from the beginning and kept with us during sunshine and rain, - the radiant inspiration of Pinchot.

MY 25 YEARS IN THE FOREST SERVICE

By L. A. Barrett, D. 5

On April 1, 1903, I received an appointment as Inspector, Forest Reserve, in old Division R of the General Land Office and was assigned to boundary investigation work in the Rocky Mountain region. Prior to this while traveling with a General Land Office survey party in the West I had done some of this work.

After a month's detail in Washington getting onto the ropes I headed west and wound up at Cody, Wyoming, early in May. Here I borrowed a saddle horse from Col. Cody (Buffalo Bill), organized a pack train party, and started out to examine the boundaries of the great Yellowstone Forest Reserve which covered over nine million acres in Wyoming, Idaho, and Montana. Two "old timers" who were with the party for a time at the start are now known as Assistant District Forester Nelson of D-5 and Assistant District Forester Woods of D-4. This pack trip covered over two thousand miles and was completed in about 6½ months. During this period the party only camped twice in the same place on two occasions.

For the next year there were similar pack trip boundary investigations in the Big Horn and Medicine Bow regions of Wyoming, and through parts of Arizona, New Mexico, and Colorado.

Along in the fall of 1904 I was for a time Acting Supervisor of the Pike Forest in Colorado; and early in 1905 served as Acting Supervisor of the Santa Barbara Forest for several months. Now that Forest has a fine three-room office in the Federal Building; there are three clerks, and the Supervisor has three assistants on his staff. Very different it was in 1905. The office consisted of the Supervisor's bed room in a private boarding house (and the Supervisor paid the office rent); there was no clerk; letters were written in longhand and copied in a press copy book. Since there was no letter press, I put the copy book under my trunk and sat on the trunk until the copies were made. Ranger Jacinto Reyes, another "old timer", and still on the Santa Barbara, is the only man on the force when I was there who is still in the Service.

In April, 1905, I was ordered to the Plumas country to assume charge of the newly created Plumas Forest, and on May 1, 1905, received an appointment as Forest Supervisor. Later in 1905 the Diamond Mountain Forest was added to my duties, and in July, 1906, I also took over the Lassen Forest. Here I had three Forests, three sets of records to keep, and was Supervisor, clerk, and general roustabout. My residence and office consisted of two rooms over a saloon in Quincy, and the Supervisor paid the rent of $15 a month. When in the field the office door was locked. Returning from a field trip of several weeks I would find a sack full of mail at the Post Office. Then the Supervisor used the "hunt and peck" system on the typewriter until the wee small hours of the morning in an effort to catch up with the job.

Organizing the work on three Forests of three million acres was an interesting job, but probably the hardest proposition tackled was the fight against the Northern California Mining Co. This was a purely timber grabbing proposition. They had located 1,885 placer claims covering 265,000 acres of the best National Forest timberland. The field examinations required a year and the hearing at the Susanville Land Office consumed 28 days. As the decisions of the Interior Department were all in favor of the United States, this pretty well broke up the timber grabbing mining graft in that region.

On January 1, 1910, I turned over the Plumas to Dave Rogers, who is still on the job, and rode a sleigh through 15° below zero weather to the nearest railroad point, arriving at San Francisco the next day, where I was assigned to Claims work in the District office. On July 1, 1910, came the appointment as Assistant District Forester in charge of Lands work in D-5.

This has proven a most interesting job, with many changes in Lands work in the 18 years. We have pretty well cleaned up the June 11, Boundary, and Land Classification work. Now the big job is Land Exchange, Uses and Recreation.

I am mighty glad to have had a small hand in the development of the National Forests, and if I had it all to do over again would want the same job. I am also glad that I have been with the work from its infancy and know the hardships and discouragements of the early days. Those who have joined the Service in the last few years will seldom have a chance for a 500-mile pack trip or a 36 hour ride in an old thorobrace coach that only stopped for meals and to change horses.

MORE SCIENCE IN OUR WORK

Fourteen District Office men recently attended in the District Forester's office what turned out to be one of the best and snappiest of discussions. The live subject was better "executive management" in our work. A reading course on this was announced in the Forester's letter of November 21 for Supervisors and others, to include study and written discussions of ten lessons covering: (1) Management, a Science, (2) Direction - Supervision, (3) Decisions, (4) Fire as an Executive Problem, (5) Planning - Organizing, (6) Accountability, (7) Incentives, (8) Training, (9) Inspection, (10) Control.

The course has progressed until Lesson 4 is now distributed for study. Lessons 1 and 2 were read and discussed at this meeting. The great big thing in Lesson 1 is the evidence that management in big organizations of today is a science, doing away with the old popular rule-of-thumb regime. Management, like agriculture, has been practiced for a long time, but only recently has there been great incentive for systematizing methods.

Grazing is probably the oldest industry of man, but only in recent years have we collected, recorded, and classified knowledge from which have been discovered principles to carry on range management scientifically. Under this scientific management principle the "situation" (the facts) governs. The old idea of the "boss" issuing orders is passing out. In our management of tree stands, the trees, with their habits and requirements, give the orders; in range management, the range and other influencing conditions give the orders, and so in any matters of personnel, finance, etc.

In our work of management of the Forests, those situations made up from facts and conditions on the ground will tell us how to proceed most effectively if we but can understand enough of the science of our work to analyze and know these facts and conditions which build the situations. A study of the "situation" in a new manufacturing concern showed that the business had developed into a "trucking" business to distribute the goods manufactured. One officer suggested that we might analyze our situation and see to it that we do not develop into the "travel" business in our forest administration work. Forest administration should come first, and all such things as "travel" should contribute to its success, and not be permitted to grow to be the main issue. Here is where our progressive travel principle is justified.

Lesson 2 indicates the need for scientific "direction and supervision" of the work of large organizations. Here again the manager has no inherent "right" to do anything of his own desire alone. An organization exists for a purpose, and all that executives do must contribute toward the attainment of such purpose. Orders should not express the executive's "will" but his evaluation of conditions and facts, and how these conditions will contribute toward the major purpose; thus orders from the executive are depersonalized. Thus, the executive, with his subordinates, together look at the conditions, and from these conditions evolve the orders which must be carried out. The Forest Service is meeting this urge for scientific direction and supervision by collecting and recording many facts in our work which permit the executives and subordinates together to adopt standards of volume, quantity, and time which scientifically guide us in our efforts. The work plans now being built up in the District are a long step toward scientific handling of our forest administration affairs. They are built up from the facts and situation as found to exist after careful analysis.

The lesson indicates that direction and supervision are essential elements of the executive job, and that some of the vital direction devices which he needs are job analysis, job descriptions, work plans, standards, standard practice instructions, and schedules. The Forest Service is rapidly developing these direction devices, and will continue to do so.

Altogether, this was a live meeting, and at least seven members in attendance were sorry that they had missed out on the beginning of the course, and ordered their names enrolled at once. It is a mighty good thing to see such keen interest develop in a subject which a few years ago seemed very dry and uninteresting.--T.V.P. in D. 4 Bulletin

FRENCH CHESTNUT BLIGHT LEGISLATION

The European chestnut blight, or "ink" disease works somewhat differently from the blight on American chestnut, but is equally destructive. The situation has become so bad in France that stringent legislation has just been adopted by Parliament with the object of saving the unblighted chestnut. This provides that owners desiring to cut more than 20 chestnut trees in the course of a year must file a declaration with the prefect, and that each tree cut must be replaced by a seedling or sprout within two years. Pasturage of goats is prohibited for 3 years in chestnut forests in process of regeneration. Forests in which blight exists are exempted from these provisions, but the owner must take such measures to combat the disease as the Forest Service may direct.

DANIEL BOONE COMES TO D-6

By Emma H. Morton

Oftentimes one confesses to a bit of curiosity as to what the descendants of a favorite hero look like; what sort of work they do, and whether they inherit any of the I T that drew us so strongly to their illustrious ancestor.

If the thousands of American school boys, past and present, who throughout half a century have read, wide-eyed and breathless, the thrilling adventures of Daniel Boone could see two of his offspring (a father and 4 year old son, both Daniel Boones of the 5th and 6th generation) they would experience a sensation of genuine satisfaction. These two, one might say, are a simon pure chip and splinter off the old block. Both have a most engaging intelligent appearance, far beyond the average; essentially true to form - the out-of-doors type.

Daniel, Sr. now is working on the Rainier Forest with a construction crew, engaged in road building in the Cispus Valley.

A movie man came recently to the road camp to photograph the big caterpillar tractor in action, and upon learning the identity of the man and boy, persuaded them to pose for their picture. Each carried a rifle "so as to look like old Daniel".

YE EDITOR DISCOVERS

Estimates of needed protection improvements on the National Forests have been revised from fresh material gathered during the winter and total nearly four million dollars for all the National Forests. These estimates include for the first time the improvements which are necessary to enable a force of emergency guards to function effectively during extreme conditions of fire danger. For the first time, also, our estimates reflect the need for roadside clearing where this is an important prevention measure, and the need for fire breaks in certain regions to supplement the system of roads, trails, and natural barriers as a means of aiding in the control of fires which are spreading rapidly under conditions of high wind, low humidity, and extreme drought.

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The Forester's allotment letter covering allotments for the fiscal year 1930 was dated March 22 and was mailed out March 23. This is the earliest date on which allotment decisions have been made in Washington for many years, and perhaps the earliest date on which they have ever been completed during the life of the Service.

A special effort was made this year to announce allotments at an early date because a number of adjustments in District allotments are necessary in order to finance the new National Forests being organized under the acquisition program and the new District office

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The newest news regarding District Nine, the Lake States District, of the U. S. Forest Service (in case you've never heard of it, it's our baby district) is as follows:

Michigan, Minnesota and Wisconsin. Office, Customs Service Building, Milwaukee, Wisconsin.

EARL W. TINKER, district forester.

FIRE AND CLARKE-MCNARY COOPERATION - Crosby A. Hoar, assistant district forester;
S. E. Schoonover, fiscal agent and administrative assistant.

FOREST MANAGEMENT AND LANDS - W. F. Ramsdell, assistant district forester.

It doesn't look like so much set down in cold type this way but from all accounts there's a lot more to it, and we'll begin to hear about the child presently.

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A bill was introduced in the Nevada Legislature on March 11 providing for a State Range Commission to consist of three members - the Governor of Nevada, a State engineer, and a member of the Nevada tax commission. The commission is to conduct a study and investigation to determine the principles, laws, and policies that should apply to the grazing use of the natural range forage resources of the publicly owned land within Nevada. The commission is to serve without pay except for travel and subsistence expenses. It is not known whether this bill passed and met with the approval of the Governor.

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Bert R. Lexen, who has been in District 3 working at the Southwestern Forest Experiment Station, has just come to Washington, where he is to work in the Section of Forest measurements.

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During February so many of the ranger district analyses were forwarded to Washington for review and compilation of the data which are taken from the analyses that it became necessary for the Branch of Operation to call for help. The services of Mr. Ramsdell of District 6 were secured, but he had hardly got under way on the job before he was offered and accepted appointment as Assistant District Forester in D-9. Another SOS was sent out and responded to by Districts 1 and 2, M. H. Wolff, Assistant District Forester in charge of Lands in District 1, and Theodore Krueger, Supervisor of the Gunnison, being detailed to help in this work. Wolff and Krueger expect this work to keep them in Washington until the first of May.

FOREST PLANTING WEEK FOR NEBRASKA

By F. R. Johnson, D. 2

Nebraska is in the forefront among the Middle Western States in arranging for a Forest Week celebration for 1929. American Forest Week has been of such value during the past several years that regardless of the fact that it has been discontinued as a national celebration, prominent citizens decided that they again wanted to have a State celebration. Dr. George E. Condra, Director of the Conservation and Soil Survey Department, took the leadership in arranging for this meeting, which was called by Governor A. E. Weaver on the evening of February 14. The meeting was held in the House of Representatives' Chamber of the new State Capitol, and was presided over by the Governor. About one hundred people consisting of university and State officials, legislators, representatives of manufacturing interests, the railroads, the Isaak Walton League, Boy Scouts, luncheon clubs, and nurserymen were present.

Dr. Condra and the Governor opened the meeting with rousing speeches in behalf of tree planting, after which the technical side was presented by Extension Forester C. W. Watkins, Dean Burr of the agricultural college, Supervisor Higgins and F. R. Johnson representing the Forest Service. Thereafter many of the other people present expressed their interest in the proposition and volunteered to assist. The commercial nursery representatives who were present reaffirmed their cooperation with the State authorities in the distribution of windbreak and woodlot trees. They stated that their business has increased since the State started the distribution of small trees and they are selling more ornamental and shade tree stock than ever before. The commercial nurseries supply the State Extension Service with hardwoods for farm planting at low rates. The conifers used in the state distribution are raised at the Forest Service nursery at Halsey. About 325,000 conifers will be furnished to the State for 1929 distribution. The Extension Service officials are anxious to increase the distribution of conifers as rapidly as the Forest Service can increase the output of the Bessey Nursery.

The meeting culminated in the selection of Governor Weaver as Honorary Chairman and State Superintendent of Public Instruction Charles W. Taylor as Active Chairman of Nebraska Tree Planting and Beautification Week. This will be held from April 15 to 22 inclusive. A committee has been appointed and the work has been subdivided among its many members so that all phases of tree planting and beautification will be taken care of. The technical staff of the Conservation Department and the Extension Service will furnish the necessary details.

ANOTHER DISTRICT COMPLETES MUNICIPAL WATERSHED STUDY

Little by little the data with reference to municipal watersheds within National Forests are accumulating in the Washington office, and a most interesting and convincing demonstration of the nature and extent of this effective form of service by the National Forests is being built up. The latest contribution is from D-5, whose studies show that 122 towns and cities, with a population conservatively estimated at three million people, are largely dependent upon National Forests for their municipal water supplies. The watersheds from which these water supplies come embrace 5,339,444 acres within the National Forest boundaries, of which 3,444,759 acres, or 65 per cent, is National Forest land and is estimated to support almost 14 billion feet of timber, with an estimated value of over 31 million dollars. The estimated grazing capacity of this watershed is 16,744 cattle and horses and 95,169 sheep and goats. On the basis of present grazing fees this range is worth $39,000 annually.

It is interesting to note that the cities of Los Angeles, San Diego, Sacramento, and Pasadena secure practically all of their domestic water supplies from the National Forests, which partially contribute also to the supplies of Oakland, Berkeley, and San Francisco. – L.F.K.

"TREES AND FORESTS OF WESTERN UNITED STATES"

By Jno. D. Guthrie, D-6

This is the title of a new book by E. J. Hanzlik, of the office of Forest Management, Portland, which will fill a need that has long existed for a popular yet accurate publication on trees of the West.

The book covers a field not yet covered, either by Sudworth's bulletin (now very difficult to get and too technical for popular use) or by any of the numerous botanies.

To mention just a few of the chapter headings will give an idea of the scope of the publication: Trees and Their Growth, Classification of Plants, Western Forest Regions, Forest Areas by Regions, Western National Forests, Tree Descriptions of some 25-30 principal and important western woods, leaves, needles, cones, fruit, structure, form, wood, uses, etc., all in non-technical but accurate language.

Mechanically, Hanzlik's book has 8 chapters, 128 pages, 25 half-tones, 9 line drawings and a map, is 6"x9" in size, and is well and attractively bound in dark green cloth. It is privately printed and can be obtained directly from the Four L Lumber News, 502 Concord Building, Portland, Oregon, at $2.50 per copy, post paid.

Here for the first time is available a really useful and valuable book on all the principal western trees, a book which every forester or Forest officer should own; it should be especially popular with school teachers, lumbermen, timber owners, and nature lovers. I can thoroughly recommend it.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII. No. 15 WASHINGTON, D. C. APRIL 15, 1929

THE EVENT OF THE HOUR IN CONSERVATION

(Under this heading the Bulletin will attempt from time to time to record important events in the field of conservation, whether of forests or other resources.)

OIL CONSERVATION

The White House has decreed that "there will be complete conservation of Government oil in this administration." With that policy for guidance, Secretary Wilbur of the Interior Department has instructed all local land offices not to receive further applications for permits to prospect for oil and gas on the public domain, and to reject all applications now pending. He appointed a committee to pass upon outstanding permits, laying down the general policy that holders who have been diligent in maintaining their equities should be dealt with fairly by the Department. Immediate steps are to be taken to cancel all permits where no drilling has been done or money spent in development. "The Federal oil conservation policy announced by President Hoover will be energetically executed," he said, and up to the close of business of March 28, 1616 permits had been acted upon, of which 349 were canceled, and 326 holders had been invited to show cause why their permits should not receive similar treatment. Some 940 pending applications for permits had been rejected.

Meanwhile, the American Petroleum Institute announced plans for the control of petroleum production. Secretary Wilbur asked the Attorney General for an opinion as to the legality of such a proposal, and also what might be the possible powers of the Federal Oil Conservation Board in the control of oil output. Executives of the American Petroleum Institute were invited to come to Washington for a conference with the Board. So far as he knew, Secretary Wilbur said, the Federal Oil Conservation Board could act only in an advisory capacity and could not assist enforcement of the production curtailment program. This Board is composed of the War, Navy, Commerce, and Interior Secretaries.

At the conference, which was held April 3, it was announced that Attorney General Mitchell had rendered an opinion to the effect that the Federal Oil Conservation Board had no authority to permit control of production. He declined to give an opinion as to the legality of the plan by which the Institute proposed to control production.

This leaves an interesting dilemma. It was the Government that started the oil conservation movement. The Government now finds itself unable to sanction control of production. The Institute says control of production by State legislation is impracticable, although there was a suggestion that a conference of Governors be called, looking to an agreement for legislation in various States. It will be interesting to watch the next move. Will it be for Federal legislation to permit control of production, as the lumbermen have requested for their industry?

WESTWARD HO - 25 YEARS AGO

By Robert W. Ayres, Plumas.

One evening along in the fall of 1900 a freshman in the Sheffield Scientific School rang the door bell of Marsh Hall and asked to see Henry S. Graves. He had heard of the new forest school which had just opened and wanted to find out what it was all about. That was my introduction to forestry and government forest work, for in those days the two were closely linked. The faculty of the school were former employees of the Bureau of Forestry, of which Gifford Pinchot was the chief, and the school itself had been founded by the Pinchot family.

Just why I chose forestry as a profession is not clear to me now, but I believe that it appealed to me then as offering a congenial means of making a living free from the ordinary routine and confinements to which the average business or professional man is subject. Strange to relate, I had a very practical plan which was to get experience along the line of wood preservation and utilization in the government service and then enter commercial work. Stranger still this ambition could have been realized had I so desired it, but - -.

I will close this preamble to my experiences in the Service by paying a tribute to the early forest school students with whom I came in contact. They were all post graduates who had settled down to their life work and to us undergraduates, who were still in the midst of college life, their earnestness was appalling and their thirst for knowledge almost indecent. These men have become the leaders in Federal, State, and educational work and are the technical chiefs of the profession today.

In those days every forestry student in Yale and Cornell obtained field work during the summer in the Bureau. Student assistants we were called and given $25 per month or all of $300 per annum as set forth in our appointments. In 1902 I was under Dick [illegible] who had a large party in North Carolina. We counted wrinkles on white pine stumps - making a yield table, or rambled through the woods making strip surveys. That same season I was transferred to a small party under Eddie Clement who with Girvin Peters was cruising around Otsego Lake in New York State gathering data for woodlot forestry. I rather believe this was parlor forestry as we were accepted socially by the millionaire colony which was then located around Cooperstown.

In 1903 my first touch of romance was encountered as I was sent to California on a sort of cooperative project between the State and Federal Government whereby California would acquire an inventory of its forest resources preliminary to forming a State policy. Our particular job was to inquire into the feasibility of planting to some sort of tree growth, the chaparral covered slopes of the Sierra Madre. Three months of cruising among these precipitous hills convinced us students that planting trees and getting them to grow in that sort of country was a scheme which was far beyond the bounds of practicability. Just what Ralph Hosmer thought of it I never knew. Anyhow, the planting job is still unfinished business. During that same year Hosmer took me on a trip from Hemet to San Diego through what is now the Cleveland National Forest and was then the San Jacinto Reserve. We traveled in a two seated buckboard and it took ten days to make the trip. Today you can do it in a machine in less than half a day.

In 1904 I left school. In those days forestry students had the choice of entering the Government service or teaching. There was no demand for private or consulting foresters. I spent one year at St. Louis working under Dr. Herman von Schrenk who had a wood treating and testing plant on the grounds of the Louisiana Purchase Exposition. I have never known a more inspiring leader. He combined the enthusiasm of a scientist with the pep of a business man and had in a few years built up his office of products into one of the best known and most important branches of the Bureau of Forestry.

My ambition to leave the Service and engage in commercial work could then have been realized had it not been that in 1905 the administration of the forest reserves passed from the Interior Department to the Bureau of Forestry in the Agricultural Department.

A new vista opened to all of us. The scientific and utilitarian features of our work were enriched by the acquisition and control of millions of acres of lands in the Far West. I began to hear stories of men who explored by horse-back and pack outfit the distant mountain ranges, and who by danger and hardships brought back maps and information by means of which new reserves were created. I met the old boundary crowd, - Olmsted, DuBois, R. E. Benedict, Smith Riley, Bill Hodge, E. T. Allen, who were the scouts, first inspectors, and finally the first administrators of the empire which had passed to Forest Service control. No commercial instincts could stand against the romance of their tales of the great open spaces. One had to go, and so I went.

Kicking myself loose from the now prosaic Forest Products and receiving a couple of farewell kicks in return, I entered the boundary section of the Service in February, 1906, and until 1907 I was in the saddle most of the time. In April I served with a small group of service men in Sacramento in connection with the relief work for the refugees of the San Francisco fire. In October while at Northfork in the Sierra Forest I attended the first supervisors' meeting ever held in California. DuBois and Captain Adams led the meeting. Of those present, only one, Bigelow, is still supervisor, and one other, Barrett, is still in the Service.

The winter of 1906-07 was spent examining June 11th claims on the Rainier Forest under "Brother" Bill Allen and early in 1907 I returned to California. In April I was called to San Francisco and found Fritz Olmsted with his Blickensderfer ensconsed in a hotel up Market Street. The city was just rising from the ruins. This was the beginning of the D-5 inspection district. Olmsted had with him as inspectors Coert DuBois, Bill Hodge, John Hatton, George Peavy and Flintham. Their first office was in the Merchants Exchange. The main headquarters of the Service were still in Washington - it took from four to six weeks to get an expense account paid in those days - and the inspection districts were the initial step in decentralizing the administration of the National Forests. Late in 1908 the inspection districts became administrative units and Olmsted as District Forester set up headquarters in the First National Bank Building.

During the years of 1906 and 1907 when I traveled over California by stage and horseback on nearly every Forest in the State I had become acquainted with the supervisors. Many of them were old Land Office men who had secured their jobs through politics. Their interest in forestry as a profession was nonexistent. Their work was mainly fire protection or the regulation of grazing, and improvement work. The rangers were ex-cow punchers, teamsters, miners and other out of door men. They had no cabins, their headquarters were wherever they camped for the night, and very few of them could count on yearlong employment. They furnished everything, sometimes even tools to work with, and expense accounts were unknown. Their stories of the early days when they chased unpermitted sheep men off the ranges, sometimes with guns, are the most colorful of any times in the history of the Service. Many of the old Land Office hold-overs disappeared when the young and snappy inspectors of the Forest Service got busy instilling the spirit of the regime.

In those days an inspection was not a casual trip around in a car. It was an event which lasted for months and disclosed all the hidden sins and dark neglected corners of a supervisor's job. I witnessed the start and finish of one in 1907 when DuBois inspected the Stanislaus. Among other things we found that the supervisor was allowing the settlement and entry of a lot of timberland which had been withdrawn as a possible addition to the Forest. Without a protest he had allowed this tract containing many millions of feet of timber to be restored to entry and lost to the Service. That fall I was sent to the Stanislaus as forest assistant and soon afterwards the supervisor was asked to resign as a result of this incident and other things. An inspector from Olmsted's staff was sent to take charge but he only lasted six months and then he departed, and I was put in charge in May, 1908. I'm free to confess, without hope of contradiction, that I knew less about forest administration than the average district ranger of today. But it was a grand chance which can not occur again in this country. Forest administration was new and in the making. The Interior Department had had no timber sales, done practically nothing with the resources. grazing was limited, and very little development work had been undertaken. The Forest Service had to initiate. experiment with, and develop its own policies and regulations in all lines of work. There were no standards or standardization. Each man in the Service had the leeway to work out his own salvation according to his initiative and ability, and the tendency was for each one to regard his own judgment as infallible. But at that we learned a lot and there was no doubt about the interest each had in his work. Let any one compare the Use Book of 1908, which was the forest Bible of those days, to the Manual of today and see how far the Service has traveled in 20 years of administering the National Forests.

Somewhat like the human animal the Forest Service changed more in the first few years of its life than in any other period of its growth. One has to be careful when writing of the days "before the War" - for that seems the turning point - or else he will be put down as a subject for the pension list. Life was more leisurely then. One could not crowd into one day all the impressions and reactions, when riding horseback for twenty or thirty miles, that one does now when driving a car for one hundred or more. The problem of keeping the married man away from home was not so acute. It took a long time to get anywhere and back again, and once out he was more apt to attend to everything to save himself another long ride than he is today with his auto. To the best of my judgment and recollection we didn't brave the big fires nor did they burn so fast once they started as they do now - maybe I'm wrong but that's the way it seems. Where would one be now if we had to go by stage or horse to reach one of our modern holocausts.

The life of a forester then was something like that of a country gentleman with a large estate to look after. But the motor car, good roads, a dwindling supply of timber, the increase of slash areas from logging, the crowding of the city dwellers to the wilderness has changed him into a high pressure man of many responsibilities. It is better so - and more power to him.

RANGER ROHWER LEADS PARTY TO RESCUE OF AIRPLANE CRASH VICTIMS

On January 24, a Boering mail plane enroute to Salt Lake City, carrying pilot and two passengers, was forced to land during a severe snow storm in the Ruby Mountains. Rescue planes having located the lost plane at the head of Wood Canyon, Ranger Rohwer of the Humboldt leading a party of ranchers started to the rescue at 6:00 p. m. the following evening. The snow was deep and soft and it was necessary for the men to take turns in leading the way on snow shoes, making tracks in the snow for the horses to follow. At 1:30 the next morning they discovered the plane jammed against a windswept ledge of rock. The pilot was found in a semi-conscious condition in the cockpit, while the two passengers were shifting about to ward off freezing. The pilot's head had been severely cut and bruised, but the other two had received no serious harm from the crash itself.

Through Ranger Rohwer's resourcefulness, the victims were bundled up and taken on horses. For six and one-half hours they battled blizzard, snowdrifts, boulders and brush until they reached the Health ranch in safety. There they were afforded rest and care until a plane took them out.

In recognition of Ranger Rohwer's splendid service the Forester has written him the following letter:

Dear Mr. Rohwer:

There has come to me an account of the fine service rendered by you in connection with the forcing down of an airplane during a snow storm in the Ruby Mountains on January 24. I learn that you left your station at night on snow shoes and led a rescuing party to the relief of the stranded pilot and passengers, and further that you declined to accept pay for this service.

I send you this expression of my personal gratification that you have so splendidly upheld the traditions of the Forest Service. It was an act that marked you as a man of resource and fearlessness, and the fact that it was outside the official requirements of your position adds to its meritorious character. You have my warmest thanks and appreciation.

Sincerely yours,

(Signed) R. Y. Stuart, Forester.

FOREST ECONOMIC RESEARCH EXPANDS

By R. E. Marsh, Washington

The agricultural appropriation bill just passed among other increases carries $40,000 for the initiation of a forest survey and $25,000 for a study of the financial aspects of forestry under the authorizations of Sections 9 and 10, respectively, of the McSweeney-McNary Forest Research Act. Except for the Clarke-McNary appropriation, under which the forest taxation study is being carried on, this is the first formal appropriation recognition of the field of forest economics. It is hoped that the action this year may be considered as indicative of the annual increases which may be expected for this kind of research during the next ten years at least.

The two projects mentioned above and another new project involving a study of forest insurance, together with the continuing of work in forest taxation, on special land studies by Sparhawk, the lumber statistics and distribution, and price projects will constitute the forest economics program for the Fiscal Year 1930.

The most significant development in this whole program will be the initiation of the forest survey. This will be a thoroughgoing, detailed appraisal of forest resources, current drain upon the forests, current and prospective requirements for forest products, and current and potential growth. It will involve an enormous task of compiling, correcting, coordinating, and supplementing information now available in more or less fragmentary and ununiform shape from many different sources. It will require a lot of expert drafting service in building up detailed and useful maps in a systematic fashion. It will need the facilities of other agencies, such as the Bureau of the Census, in the collection of further information on consumption and production. The total appropriation authorized for the whole job is three million dollars, approximately 2/3 of a cent per acre. Obviously, this will not permit of covering any large proportion of the country's forest area with an intensive survey. To complete the project with reasonable accuracy and speed will therefore depend upon the hearty cooperation of all sorts of Federal and State agencies, private organizations, associations, and land owners.

It is proposed to initiate intensive work in the forest survey in the Pacific Northwest and particularly in the Douglas fir region. When it will be completed in that region and when work will commence and to what extent be carried on contemporaneously elsewhere will depend in part upon the status of appropriations.

This whole expansion in forest economics research will require at least 15 new men for next fiscal year in the various grades from the Junior up to the Principal, and possibly even higher. Civil Service announcements will soon be out for unassembled examinations in the several grades from the Assistant up.

YE EDITOR DISCOVERS

Recently in the course of a talk before the California Forest Research Advisory Council, Major Stuart said:

"The Forest Service organization is endeavoring to make its operations most efficient, but unless such an organization has fed into it a continuing stream of new ideas, its efficiency is short lived. The function of research men is to be perpetually dissatisfied with things as they are and to keep the administrative officers from becoming smugly satisfied with present performance. We can't afford to be complacent with our accomplishments now, and I doubt if it ever should be so."

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There has been much discussion during recent years regarding the extent to which Forest officers should assume responsibility for putting into effect desirable range practices on the Forests where for one reason or another the stockmen have failed to adopt them On one of the Southwestern Forests where dependence upon the stockmen to comply with the plans for salting permitted cattle resulted unsatisfactorily, the permittees were required to purchase a specified amount of salt and this was distributed on the range by the Ranger. Provision for this work was included in the Ranger's district work plan which recently came to the Washington office for review. Discussion as to whether this job should be in the plan at all or, if properly in the plan, whether it should be a recurrent or nonrecurrent job has been interrupted by attention being diverted to Memorial No. 2 passed by the Ninth Legislature of the State of New Mexico requesting the Secretary of Agriculture to amend the regulations so that the owners of livestock may be permitted to place salt within such "forest preserves" instead of having the same placed therein by the Forest Ranger in charge of such "forest preserves, as is now provided by the Forest Service regulations."

One weakness of the memorial is that it does not insure against a return to the wholly unsatisfactory salting conditions that prevailed before the Ranger undertook the thankless task of enticing the cattle by means of well placed salt to go where the feed is rather than to follow their own inclinations to overgraze limited areas around water and old salt-licks, if any.

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Supervisor M. S. Benedict of the Sawtooth wrote a thriller "About a Forest Fire." Heroic rescues, frantic escapes, sensational gun play feature the story of a blaze started by a careless camper. Benedict's story has been adapted for a radio program in the Department's series. It will go on the air from the stations subscribing to the Department's radio programs as an "Outdoors with the Scientist" talk on April 23.

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A research conference to discuss the program of the Forest Products Laboratory and field units in forest products will be held at Madison April 15-27. The general plan of the conference calls for going over the high spots of the program during the first week, leaving the second week for the consideration of special matters in smaller groups. The work of the various sections and units during the past year will be reviewed and a program established for the work to be carried out during the ensuing year. In attendance at the meeting will be not only members of the Laboratory and the field products offices but the Directors of some of the Forest Experiment Stations, District Foresters or their representatives, and representatives from the Branch of Research in Washington.

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Foresters have begun to put forward their ideas regarding the place of forestry in a farm relief program. The March issue of "The United States Banker" contains an article on the "Relationship of Forestry to Farm Relief" by Sparhawk, and the "Annals of the American Council of Political and Social Science" for March has an article by Zon on "Forestry and the Agricultural Crisis." Both articles lay stress upon the menace of idle land and the use of submarginal land for the production of forest crops.

BIG TREES

By H. Thol, Flathead

All hands clear the deck for action!

This time the Flathead Forest in District 1 wants to go on record and lay claim to the distinction of being the champion Engelmann spruce tree grower in the Rocky Mountain region.

On Page 6 of the May 7 Service Bulletin of 1928 the Lincoln Forest in District 3 claims to have grown and cut the largest Engelmann spruce tree in the Rocky Mountains. Said champion tree measured 52 inches in diameter at a point 5 ft. above the ground, 138 ft. in height, and cut 8-16 ft. logs. Some tree indeed. On Page 8 of the June 18. Service Bulletin of 1928 the Gunnison Forest in District 2 gives the Lincoln Forest a very black eye and proudly places their 62 inch champion spruce tree in the bright stage lights.

Now to settle all arguments, if any one wants to see real Engelmann spruce in the Rocky Mountains, he is cordially invited to come to the Flathead Forest in District 1.

The following gives the records of two Engelmann spruce trees found in the Gordon Creek in the Flathead Forest this past season. Tree # 1 growing at an elevation of 6500 ft., diameter of tree at about 5 ft. above the ground and well above the butt swell is 74 inches. The bole is straight and has very little taper. Though this tree was struck by lightning many years ago and the top is broken off at about 80 ft. above the ground, the tree is still green and vigorous. Several other spruce trees close by measure from 3 ft. to 4 ft. in diameter.

Tree # 2 found 1/4 of a mile from Tree # 1 at the same elevation measured 69 inches at 5 ft. above the ground. The height of this tree was estimated at about 200 ft., the bole is straight and holds a good diameter well up to the top. The tree is green and vigorous except for the extreme top, which is dead. A study of the age of these trees could not be made. It was estimated Tree # 2 contains about 10,000 ft. board measure (gross scale)

Pictures of both trees were taken, so facts are on hand to verify this statement. Who comes next?

READING CLIMATIC CHANGES FROM TREE RINGS

By G. A. Pearson, Southwestern For. Exp. Sta.

Prof. A. E. Douglas, who has been for some years investigating tree rings in relation to cycles of rainfall has recently published a second volume through the Carnegie Institute at Washington. The Flagstaff tree record extending from 1300 to 1925 is regarded as the best of the series as a history of rainfall, according to the report. In addition to the 14 and 21 year cycles, it also shows a 11.3 year cycle which corresponds to the known sunspot record. This cycle was interrupted from 1630 to 1850. It also appears, with interruptions, in the Sequoia record extending back to 300 B. C. Flagstaff trees also show a 7 and 9.4 year cycle during portions of the 600 year period. Growth maxima and presumably rainfall maxima occur during sunspot minima. Measurements of solar radiation show an average of about 3 per cent above normal during sunspot maxima. The dry years in the Flagstaff record analyze best on 14 and 21 year cycles, with major droughts at about 150 year intervals and minor droughts at 40 or 50 year intervals. The extension of cycles observed in the past 200 years in the Flagstaff area indicate possible large growth of trees in the 1930's and 1950's, with depressions in the early and late 1940's.

SOLD — A SADDLE

LISTEN !
In the July "Olympic Howler"
I inadvertently inserted
An ad. offering a saddle
FOR SALE !
The saddle was
Sold promptly to the
First man, a
Few days later.
However, letters
With checks and even M.O.'s
Began to come in.
My ad. must have
Been so good that
The "6-26" copied it
In August.
Another flood of letters.
In September, "Ranger"
Copied the ad. -
More letters, and telegrams.
Finally,
The "Service Bulletin"
Carried the ad.
And now,
I am getting letters
From all over the U. S. A.
I only hope the big
Dailies or A.P. don't get that ad,
Or else I'll have to go
Into the saddlery business
And quit ranging.
LISTEN, Again
That saddle is SOLD !
I thank you.

L. D. Blodgett.

Suggestion - Why not lay in a supply of used saddles and take advantage of the advertising? - Ed.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII, No. 16 WASHINGTON, D. C. APRIL 22, 1929.

"ALMOST TWENTY-FIVE YEARS AGO"

By T. D. Woodbury, D. 5

Looking backward I realize that my career as a man of the forests really began years before my connection with the Forest Service, when as a boy in New Hampshire and southern Maine I picked blueberries and fought Boston & Maine Railroad fires for cigarette money in the summer; hunted partridges and tagged around after French Canadian wood cutters for diversion in the fall and winter. This association with the woods and woods people naturally led me into the forestry trail. During my junior year in college I came in contact with another young fellow who was considering forestry as a career and shaped my course in the same direction, which led me through the Yale School of Forestry and out into the "wild and woolly" West, away from the Atlantic shores where my ancestors for several generations had been engaged in maritime pursuits.

My first western experience dates from 1904 when, on July 1 of that year, I headed for Halsey, Nebraska, with a "Forest Student's" commission in my pocket, there to assist "Charlie" Scott and "Billy" Mast for the frugal honorarium of $25 a month, in growing pines for planting the Nebraska sand dunes. The forestry practiced consisted of weeding and watering seedlings and building barbed wire fence. On the latter job, which was performed under a glowing sun, I acquired a tropical tan and a "cuss word" vocabulary, both of which I have retained to date. Recreation consisted of daily swims in the swift current of the Dismal River, and Sunday prairie chicken hunts (the product of which added welcome variety to the daily menu of bacon, ham, and beans), enlivened occasionally by the generally unsuccessful effort of some ambitious member of the bunch to stay on top of an unbroken bronco.

February, 1905, is an outstanding date in the history of American forestry, the significance of which is well known to all readers of the Bulletin. During that month Gifford Pinchot visited the Yale School of Forestry and announced to the senior class that he was looking for a few men trained in forestry to fill the newly created job of forest assistant on western forests. This appealed to several of us as the opportunity for which we had been waiting and we "signed up" to go if we passed the much dreaded Civil Service examination. Those who qualified were gathered in Washington on July 1 to receive instructions and advice from good old Captain Satterlee and others who had had western experience. Soon afterward we were started on our great adventure "as green as grass," full of curiosity in regard to the requirements of our jobs, and willing to "try anything once." For some reason, to me now a mystery, I expressed a preference for Arizona or New Mexico. My assignment was the Battlement Mesa National Forest in western Colorado (now the Grand Mesa). "Buster" Brown (peace to his ashes) traveled with me bound for the old Sierra Reserve. About the middle of a dark night I got off the train at DeBeque, Colorado, then (and probably still) an excellent example of a "tank town." As I watched the train, bearing Brown, disappear into the night I remember clearly to this day the feeling of loneliness which I experienced. Had I known the length of time that would elapse before I would contact anyone who "spoke my language" I might have started the long walk back to Boston immediately. Instead I located a bed in a dilapidated hotel, after some little difficulty in arousing a frowsy proprietor. Early the next day an old Concord horse stage conveyed me to my new home in a rough board hotel at Mesa, 22 miles away. My entrance into town created mild curiosity among the natives but secured for me no welcome from the Forest Service personnel. I located the Supervisor's log house and found that he was away. Upon his return I was received without enthusiasm, told to secure saddle and pack outfit, get out on the Forest, and do whatever I thought I was sent there to do. John Lowell, now of the Bitterroot, was present at my initiation into the ranger group, which consisted of a 10 mile downhill ride at a good stiff trot. Suffice it to say that I got there, although the bottoms of my trousers were considerably elevated during the journey, which seemed to add to the joy of the occasion. This difficulty was soon overcome by a pair of yellow riding boots with long flaps at the tops. These and other like paraphernalia soon overcame some of the handicap of my eastern bringing up and enabled me to "get by" with these men who were brought up in the saddle and with whom I was to live and work. I found the ranger force friendly and helpful.

Grazing regulation was, at that time, the principal activity on the Forest and my work while there had to do largely with this line of activity, including taking applications, allotting range, inspecting range, counting stock, enforcing salting regulation, and pounding out innumerable grazing forms on an old Oliver "one-lung" typewriter with three fingers. Only a few favored Forests had clerks, or stenographers, in those days and the Battlement was not one of them. Boundary surveying occupied the fall and early winter, with some time and attention devoted to the preparation of a so-called "silvical report" during stormy days.

One evening in the late fall upon my return from the field I found a quiet stranger sitting by the fireplace. It was Smith Riley. We spent several days together, which gave me a chance to unload my troubles and to secure inspiration and advice. As a result of Riley's inspection I received a promotion from $1,000 to $1,100 the next spring along with an order to pack the old wood field chest and report at Denver for duty on the Pike Forest. There I got into real timber sale work at once. Sale policies and procedures were in a state of flux in those days and contracts were regarded by operators in general very much as the Kaiser regarded the treaty with Belgium. To survive it was necessary to get "hard boiled." Therefore, I got "hard boiled", collecting quite a fund of human experience in the process which has been of value in more recent years.

On July 1, 1907, the Inspection Offices, forerunner of the present field organization, were created. I was the first inspector appointed to assist Riley in the Denver territory. Later Kneipp, Morrell, Ames, and Syd. Moore joined the organization. We took our jobs seriously. Every activity on the Forests visited was investigated and reported upon. Volumes were written. The system proved to be slow and unwieldy, requiring too much paper work and involving long delays before action could be secured from Washington. However, it had its place in the scheme of things. Many a misfit, incompetent, or worse, "bit the dust" as the result of the investigations made during this period and many a good man gained knowledge of his job and encouragement to go forward, through an inspector's visit.

Following a session in the Washington office during the latter part of 1907, I was detailed to District 5 as Assistant Chief of Silviculture under "Puget" Homans. Homans took up State work in 1909 and I assumed my present duties in early 1910. During this period from 1910 to the present the annual timber cut in this territory has increased 600 per cent (from 50 million to 300 million). Silvicultural systems and Management Plans which appear to be applicable to the peculiar conditions existing in this unique State have been developed. To have had a part in this development of a system of California forestry over so long a period has been an experience well worth while from my viewpoint. The era of the Pacific is just dawning. Economic changes vitally affecting our natural resources on this coast are just around the corner. The job grows bigger, better, and more interesting. I hope to be big enough for it.

NATURE'S CALENDAR A PLANTING AID

By E. N. Munns, Washington

Before many years the Nation will be engaged in a reforestation program dwarfing in its scope anything that any other nation has attempted. Planting will be the order of the day, and the old saw about "planting two where one grew" will be revived. Our Federal service will embark upon an enlarged program to meet responsibilities of many hundred thousand acres of non-restocking forest lands; the State services will plant their State forest lands in similar ratio; the counties and municipalities having non-forested lands will try to put them into production; and the private timberland owner will come forward with a program, the like of which none of us can foresee. Already straws in the wind indicate the trend. District 7 has added a planting assistant to the Office of Forest Management, is developing a real nursery in West Virginia, and has other nurseries on trial. The California District has plans for another effort at reforestation upon its brush lands. District 9 has a real program under way.

The States, stimulated by Federal contributions, are expanding their nursery and planting efforts. Where 1,000 trees were once raised and planted, tens of thousands are being set out on State lands and hundreds of thousands of trees are being distributed to schools, farmers, and interested parties. The further expansion of State efforts in this line of activity is indicated by the New York program of putting idle forest and abandoned farm land to work on a big scale.

Private owners too are going in for planting. At present this is on a limited scale and in effect only by relatively few companies and individuals. There are outstanding examples, however, of private enterprise, such as the Great Southern Lumber Company and several companies in the redwood region.

In this forestation program, many things will be required, one of the important items being seed. That good seed will pay dividends in good growth and high quality is beyond serious doubt and the "source-of-seed" question has awakened much thought on the part of administrative officers. To play safe and to make sure that the least possible trouble will develop, the eastern National Forest District expects to use home-grown seed as far as is possible, and so will plant areas with seed from nearby forests of the same general climate and soil conditions. The stage is apparently set for real progressive planting policies on the part of the interested agencies.

But, although the stage is set, how can action proceed without serious trouble unless we know something of the climatic conditions of the areas to be planted so as to be sure that the seed used came from the proper climatic source? Particularly is this true in planting species not native to the locality, or species practically eliminated because of overcutting or fire. Although it is impossible and impracticable to establish weather stations everywhere because of the cost and of the difficulty of getting consistent regular records, there is another way. That way is to read Nature's own climatic data and consult her calendar, for plants in their development are as faithful in their attentions and as sensitive to climatic variations as the weather instruments themselves and furthermore, for our purposes, are perhaps more reliable than short-time records of one climatic factor alone. Thus if we know that the pines of one locality burst their buds, open their flowers, shed their pollen on certain dates and that pines on or near the site to be planted behave similarly on approximately the same dates, we would know it was, in general, safe to select seed from that locality for the planting site. Or, if pines were not available as criteria on the planting site, perhaps the willow, manzanita, red bud, aspen, dogwood, gall berry, or laurel, would be found on both the planting site and the forest, and their leafing and flowering habits would furnish the clew as to similarity of weather conditions.

Such comparisons of sites are without merit unless the vegetative records are kept consistently and regularly. All field men, and many others, keep a diary. Some entries are good, some are not so good. But, in the absence of more formal suggestions, might it not be worth while to add a note daily on the status of the forest vegetation, relating it to specific localities, sites, and elevation? It would be easy to do so, would require little effort, would take little added time at night from the Saturday Evening Post. Many men already keep records of range readiness which is nothing more or less than a plant calendar of forage plants. Why can't foresters, if worthy of the name, keep records of the development of forest vegetation as well? When we need the facts on the climate of many local areas, we'll need them badly, and, unless they are available, many mistakes in planting may be made.

Yes, its one more job, a good idea perhaps, but it does require careful observation, systematic record, and a definite program. The early colonial diaries hold interest only as they reflect the habits of thought of the authors. Our field diaries are, generally speaking, too brief or too sketchy to be of much value in the future.

THE EVENT OF THE HOUR IN CONSERVATION

G. P. Asks Conference on National Resources

Acting in behalf of the committee to promote an inventory of the natural resources of the world, Gifford Pinchot recently transmitted to President Hoover an open letter suggesting that he call an international conference on conservation of natural resources. The letter which was signed by 175 leaders in American life who are interested in the cause of conservation follows:

"The President,
The White House,
Washington, D. C.

"Dear Mr. President:

As citizens of the United States, persuaded of the necessity for conserving the material basis of prosperity not only of our own country but of the whole earth. we earnestly and respectfully ask you to consider the advisability of calling an international conference to discuss the common interests of the nations in the conservation of natural resources, and to provide for an inventory of those resources throughout the world.

"We are conscious of the many burdens which rest upon the President, but we are convinced that the fundamental importance of this matter, upon which the civilization, welfare, and mutual helpfulness of the nations directly depend, warrants us in calling it to your attention at the outset of your Administration. Indeed, you yourself have repeatedly pointed out the vital role of conservation.

"The United States has already moved in the direction we suggest. In 1909 President Roosevelt, acting through Elihu Root, then Secretary of State, addressed to the nations of the world an inquiry as to their attitude upon this matter, and later formally invited them, with the concurrence of the Queen of Holland, to attend a 'world conference for the conservation of natural resources,' to be held in the Peace Palace at The Hague.

"The response was immediate and most gratifying. Of the fifty-eight nations to which invitations were addressed thirty (including Great Britain, France, Germany, Canada, and Mexico, and most of the Latin American countries) promptly accepted. But five nations, all of them small, declined.

"President Roosevelt's action was based upon the proposition that 'the people of the whole world are interested in the natural resources of the entire world, benefited by their conservation and injured by their destruction. The people of every country are interested in the supply of food and of material for manufacture in every other country, not only because these are interchangeable through processes of trade but because a knowledge of the total supply is necessary to the intelligent treatment of each nation's share of the supply.'

"The invitations addressed to the nations suggested 'that to the task of devising economical expenditures of resources, which, once gone, are lost forever, there should be superposed the duty of restoring and maintaining productiveness wherever impaired or menaced by wastefulness.' It concluded with these memorable words: 'As to all the great natural sources of national welfare, the people of to-day hold the earth in trust for the people to come after them. Reading the lessons of the past aright, it would be for such a conference to look beyond the present to the future!'

"We believe so great and beneficent a project, initiated by the United States, received with approval by the great majority of the nations, and so clearly harmful to none and helpful to all, may appropriately be revived and carried to completion by the country of its origin under an administration which, like your own, seeks to maintain the most cordial relations with the people of the earth."

The committee to promote the inventory is composed of Major George P. Ahearn, Professor John Dewey, Clarence Phelps Dodge, William Green, Charles P. Howland, Bishop Francis J. McConnell, Governor Dan Moody, Dr. Parker Thomas Moon, Ruth Morgan, George C. Pardee, Amos R. E. Pinchot, Gifford Pinchot, Jackson H. Ralston, Dr. John A. Ryan, Rudolph Spreckles, I. B. Sutton, Henry Wallace, Dr. Stephen S. Wise, Dr. Mary Wooley, and B. F. Yoakum.

FIRE FIGHTERS LOSE THEIR LIVES ON THE UNAKA

When a sudden shift in the wind compelled a crew of 25 men fighting fire on the Unaka Forest near Damascus, Virginia, April 7, to abandon the attack on the fire and disperse, two men became separated from the rest. These two men were trapped by the fire in a lateral draw, or hollow, and were unable to make their escape. They were missed from the crew at about 4 p. m., but a searching party did not find their bodies until about midnight.

Supervisor Broadbent reports that but for the coolness of Guard Lethcoe other men would probably have lost their lives. So far the District office has not received details as to the circumstances of the fire, but approximately 500 acres were burned.

YE EDITOR DISCOVERS

This month brings to a close the scheduled series of radio programs on forestry that the Forest Service has been putting out through the Department of Agriculture's radio service. Beginning last October, Public Relations worked up during the season a total of 10 "Farm Forum" programs, 5 "Outdoors with the Scientist" programs, 2 "Housekeepers' Chats," and 28 "Farm Flashes." Most of the "Farm Forum" and "Farm Flashes" programs were localized on a regional basis. Forestry material also was included in the Radio News Digest. Prepared in the Department, these radio programs were sent to more than 100 stations throughout the country and were presented by the local station staffs.

The material presented included talks on various phases of farm forest management, marketing, wood preservation and utilization, fire protection, National Forest uses and administration, and camp fires and camp sanitation. Morse Salisbury, Chief of the Radio Service, estimates that the programs reached five million listeners.

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One of the independent Government agencies whose personnel has been markedly affected by the recent change in administration is the National Forest Reservation Commission, which, as is known, consists of the Secretaries of War, Interior, and Agriculture, two members of the Senate, and two members of the House of Representatives. The next meeting of the Commission, probably to be held early in May, will be the first experience of that kind for the three new Cabinet members and also for Representative Aswell of Louisiana, who recently succeeded Representative McReynolds on the Commission. Senator Harris, who succeeded Senator Overman, has two meetings to his credit. The only two members of the Commission who have had extended participation in its activities are Senator Keyes of New Hampshire, a member of ten years standing, and Representative Hawley, the sole remaining charter member, who actively has participated in the work of the Commission since its establishment in 1911. Notwithstanding the progress made during the past 18 years the problems confronting the Commission probably are greater than at any previous time because of the more numerous and more widely distributed purchase areas which have been established and the increased realization of the need for Federal cooperation in forest land management which is manifesting itself in new regions.

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The Secretary of the Interior has announced the appointment of Samuel T. Woodring as Superintendent of the new Grand Teton National Park. Woodring served as Chief Ranger of the Yellowstone National Park for more than 7 years. Actual administration of the new Grand Teton National Park will not be taken over until June 15.

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Another manifestation of the California spirit is reflected by a land exchange case just received from District 5, in which the Chief of Lands practically guarantees that within 10 years a return of $20 per acre will be realized from the sale of stumpage from offered lands for which a present consideration of $5 per acre is being allowed, emphasis being laid upon the fact that after said $20 worth of timber per acre has been sold the United States still will be possessed of a highly valuable and productive estate. This is the kind of trades we like to make, and any other District that cares to raise District 5's ante hereby is invited to do so.

THE LADIES AS NEWS WRITERS

By Irene A. Jones, D. 3

In checking over items written by District 3 men during the year 1928 for the report to the District Investigative Committee, it was noted in the Service Bulletin on January 23, 1928, in which Emma H. Morton of District 6 apparently broke the ice for the ladies with her article "Four Birds Nailed With One Stone", that additional news items by the ladies would be very welcome. The writer has had quite a few items in the Service Bulletin from time to time which were clipped from the local Daily Bulletin and sent in minus her name, which is the usual custom. During 1928 two items appeared, to my knowledge, of my own creation, namely: "Aurora Borealis Puts D-3 On The Qui Vive," August 13, and "All The Comforts Of Home," October 22. However, Emma H. Morton of D-6 apparently leads all the ladies of the Districts in numbers of items appearing in the Service Bulletin, for in addition to the above mentioned article she had published "Sans Men" September 17, "The Leaven Works", Nov. 5, "Head, Heart, Health, Hands" November 12, and "They Certainly Read Their Newspaper" November 26. Helen F. Griffin of D-6 also made her debut with "Dorothy Erickson Is Heroine" in the October 22 issue, whilst Doris W. Hayes of Washington had the honor of having her item "Clements and Clements Flower Families and Ancestors" published in the Service Bulletin, November 5, and also in the Forest Worker of November. (Has anyone been overlooked?)

Let's get together girls and show the gentlemen that we can not only gather but can also write interesting items for the Forest Service family.

(Ye Editor knows you can, girls, but it might be as well to prove it to some of the other gentlemen)

AMERICAN FOREST WEEK AND ARBOR DAY

By John E. Gribble, Crater

Some time before Arbor Day in 1928, I talked to the teachers and pupils at the Fort Klamath schools about planting trees in the school grounds. They took to the idea eagerly, so I talked with several citizens and was asked to give my planting plan to the Community Club. They were very much interested and the visualized picture I drew of their grounds and buildings ten years and 50 to 150 years hence appealed to them. I lent several "American Forest and Forest Life" and "Nature" magazines and other forest literature to the schools. Result: 225 trees and shrubs were planted in the school grounds by a heartily cooperating citizenry and enthusiastic school pupils. An excellently combined Arbor Day and American Forest Week program was put on by the grade and high schools. My subsequent magazines were eagerly sought, and reinforcements were gathered to our fire prevention and forest protection army. Some of the other schools combined their Arbor Day and American Forest Week, or as some called it, "Forest Protection Week" exercises. The school at the Indian Agency put on an excellently combined program and the Chiloquin schools did fine work, too.

Instead of the contemplated abandonment of American Forest Week programs, could we not combine observation and celebration exercises for Forest Protection and Arbor Day? Each one helps the other.

GRAND TETONS SECEDE FROM THE NATIONAL FOREST UNION

By L. F. Kneipp, Washington

Through approval by the President on February 26 of an act of Congress creating the Grand Teton National Park, one of the scenic gems of the National Forest system has been transferred to the National Park system. The area involved consists of the east slope of the Teton Range, probably one of the most rugged and beautiful mountain masses in the West. Its towering peaks and sheer granite cliffs are not, however, of appreciable value for the production of timber and the change in its status will not substantially affect the timber productive capacity of the National Forests. Like the Yellowstone, the Rainier, the Yosemite, etc., it will be completely surrounded by National Forest land, thus creating an additional need for the careful coordination of National Park and National Forest administrative plans.

Incidentally, a battle is now raging with reference to the proposal that the area immediately to the south of the new Park be opened to sheep grazing, and scarcely a day passes without the receipt of at least one strenuous letter either approving or opposing the proposal. Probably there has been no other instance in recent years when there has been so clear-cut a division and conflict of thought, both locally and nationally, with regard to a land use policy as is evident in this case. Neither side sees anything short of a calamity if the views of the opposition are adopted. The congressional delegation has taken a wholly neutral position with regard to the matter and has indicated a pronounced willingness to let the Forest Service work it out. A careful study of the whole situation is now in progress.

CAMERA POINTS

(A letter from District Forester Peck to D-2 Forest Supervisors)

A project has been included in the annual investigative program of the District calling for the locating and maintaining of camera points for the purpose of showing the effect of various influences on forest growth over a long period of time, primarily beyond the span of any one individual's memory. Although some points will have to be located with the idea of taking a fresh start and doing all of the work in the future, there are pictures which have been taken during the last 30 years, the location of which can be found and new pictures taken thus enabling us to get a head start of a number of years in these individual cases.

A faithful search has been made through a large collection of old pictures sent us recently from Washington, to find pictures which it seemed to us had possibilities along this line. Those taken on your Forest are being sent to you under separate cover. I will appreciate it if you will go over them carefully, holding out all those which you believe show scenes which can be located and rephotographed to-day so as to establish the sort of a record we want. The other pictures may then be discarded.

During the coming field season, some member of this office will probably go over with you the photographs you have saved out and make further plans for carrying on this project, including the establishment of camera points for which we do not now have any original photographs.

In this connection, I would like to have you keep the matter in mind in order that concrete suggestions can be made as to locations and subjects.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

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WHAT'S DOING IN COST ACCOUNTING

By Roy Headley, Washington

During the winter of 1928, under the general direction of the Forester, Mr. Keplinger conducted a discussion course on accounting. There had previously been some general participation in discussion courses conducted by Mr. Keplinger but the course in accounting was the first one definitely launched on a Service-wide basis and participated in by members of all National Forest Districts. This method of conference by correspondence gave a new opportunity for Service-wide exchange of ideas on a live subject under the leadership of an expert in the use of the discussion method. As was to be expected, a great diversity of ideas was brought out, a better understanding of the place of accounting in public service resulted, and a certain more or less definite crystallization of opinion developed.

In order to further crystallize the ideas of those taking the course Mr. Keplinger prepared a questionnaire which made it possible to ascertain more definitely just what conclusions had been reached.

A committee of accountants with Mr. Keplinger as an advisory member was then assembled and given the job of reviewing the discussions and recommendations of the cost accounting study in order to rough out a system which would go as far as seemed practicable in carrying out the desires expressed by those taking the course.

In order to secure the opinions and recommendations of all Forest Service executives, and especially those who had not taken the discussion course, a letter was sent from the Forester's office in August, 1928, requesting final conclusions and recommendations. The replies were assembled in Washington and carefully studied.

Analysis of these replies showed a majority of the District Foresters to be favorable to the adoption of a system which would follow the general plan proposed by the Denver committee. Sixty-six Supervisors and Assistant Supervisors were favorable to the new system, while 50 were unfavorable. Thirteen Executive Assistants and Clerks were favorable, while 33 were opposed. Twenty-one members of District offices were favorable, with 16 opposed. Counting all the replies which could be interpreted one way or the other a total of 100 were favorable with 99 opposed. Field opinion was therefore too closely divided to be a determining factor in the Forester's decision. The size of the unfavorable minority suggested that if a fine new modern cost keeping system should be developed it might turn out to be a tool which too many executives would allow to grow rusty and dull from non-use.

Another factor had to be considered. The Forester can not delegate his responsibility for the financial management of the National Forest properties and can not escape the necessity for employing every instrumentality which promises to make a worthwhile contribution to better financial management. The belief that enough men would make use of a new and sounder system of cost accounting, to result in materially better financial management in the end, tipped the scales in favor of a decision to proceed with the development of a new system, notwithstanding all the difficulties and work involved in the change.

This decision was announced to the District Foresters in March, 1929, and Mr. Mahurin is busily engaged in completing a system which, in the main, will carry out the conclusions developed by the course in accounting and the recommendations of the Denver Cost Committee.

The system will not be put into general use on July 1, 1929, but will be installed for experimental and developmental purposes on at least one Forest in each National Forest District.

Naturally the new system will be entirely satisfactory to only a few men. It will be considered too conservative by many and too ambitious by nearly an equal number. Compromises which are painful from the standpoint of correct principles of accounting will have to be made in the interest of simplicity and to avoid any material increase in the cost of operating our cost accounting system. The situation calls for patience from those who would forge ahead more rapidly. Others who prefer not to be bothered by a new cost accounting system might well give it a trial to see if maybe after all they can not learn something from such a source which will help them in keeping up with the procession.

RAMBLINGS FROM A CALIFORNIA SUPERVISOR

By Richard L. P. Bigelow, Tahoe

June 1, 1902. That is a long time ago and yet it seems but yesterday that I started work in forestry under Rev. Chas. S. Newhall, Superintendent of Forest Reserves in California in Division R of the Department of the Interior. Little did I then think it was to be my life's work. I was traveling in the foothills of Fresno County raising cattle. Mr. Newhall approached me in April of that year to take a temporary appointment as Ranger in the Kings River Canyon District. The Sierra Club was to take one of their first outing trips into Kings River Canyon that summer and he asked me to take this position to look after the Club while they were on the Sierra Reserve. That was my first important forest job.

Chas. Howard Shinn, our first head Ranger on the Sierra and later Forest Supervisor, arrived in August of 1902, and it was his enthusiasm in the work that finally persuaded me to give up cattle raising and accept a permanent appointment that fall. My work those first two years in Fresno County was fire fighting, boundary line survey, trail work, sign posting, and some forestry in learning to cruise timber.

It was in September, 1903, when I was building the Tihibiti Trail that I received instructions to go to Inyo County to help trail sheep across the Sierra. When I arrived at Round Valley I received a telegram from Mr. Shinn saying that I had been appointed ranger at-large for the Inyo County division of the Sierra Forest Reserve, taking the position held by Ranger Price, one of the old Department of Interior Supervisors. The old gentleman helped me to get started and introduced me to the citizens of Inyo County, and, on October 3, 1903, I took over this Division and Price's office and supplies at Independence.

My big problem in Inyo County was to break the transient sheep outfits from entering the Forest Reserve. The summer before I came, Rangers Geo. Naylor, Grant Clark, and

Henry Bell had had a scrap with a Frenchman, Louis Girard; and Geo. Naylor, to protect Clark, had shot the sheepman. Girard was well again in two months, but the Forest officials sent out orders that Rangers were not to use force but were to withdraw and report if sheepmen refused to leave the forest. We Rangers had to pack guns, however, to protect ourselves. We did not like the orders to withdraw and there were no withdrawals that I ever heard of.

In 1904 we had our big scrap with the foreign sheep outfits. It was an evening in early May that I found nine bands of sheep inside the forest boundary. I gathered my Rangers and local cattlemen and at daylight next morning proceeded to drive the sheep out of the Forest. We caught three bands of ewes and lambs and mixed them together and turned them over to the herders. It was a 15-mile drive to the nearest corrals at Fort Independence and it took the herders a week to separate the sheep. This was the last of the big fight, and really the end of the transient sheep business of California. It was in the late fall of 1903 that I met W. A. Langelle of the Bureau of Forestry on boundary work and he told me of Mr. Pinchot and the other young men of the Bureau.

H. D. Langelle, who was the first Washington inspector I met, came to my district in August, 1904, and started me on range reconnaissance, and I spent that fall in a rough survey of the high sheep ranges from Kearsarge Pass to the Yosemite National Park. In July, 1905, I received a telegram that I was to be appointed a Supervisor and on August 7, 1905, I arrived at Weaverville to take over three new Forests, the Trinity, Klamath and Shasta. Before I left the Sierra, I spent three days in Supervisor Shinn's office, and Mrs. Shinn showed me how to use an Underwood typewriter and something of filing and accounts. The rest was up to me. The worries of learning how to write on an Oliver, hire and train green Rangers, fight fires without any funds, to make my $1200 salary pay all field expenses and office rent as well as my living, with a wife and 8 months old baby to support, and with almost 5 million acres to place under forest regulations, was a job well worth tackling. Inspector E. T. Allen, then State Forester of California, finally arrived and met me at Yreka in November, 1905, and if ever a man was welcome he was. There was no District office to fall back on and Washington was a long way off. If one needed advice it was so long coming that one had worked his problem out for himself before the advice was received. Snap judgment had to be made whether right or wrong.

Then came Inspector John H. Hatton to help me with my first stock meetings. He didn't know any more about a stock meeting than I did and was scared as stiff as I was of that array of rabid stockmen, ready to fight any and all regulations. I had Hatton open the meeting at Redding. I will never forget the night crowd in my room at the hotel, with stockmen asking questions as fast as they could shoot them at us. We had a better time at Sisson, as we had learned the grazing regulations pretty thoroughly from the stockmen at Redding.

On April 4, 1906, I transferred my headquarters from Weaverville to Yreka and turned over the Trinity National Forest to Forest Supervisor E. S. R. Mainwaring. Soon after I arrived, Geo. A. Coleman was sent to me as Deputy Supervisor to be broken in to take over the Shasta National Forest, which left me with the Klamath, at that time including something over two million acres. It was that summer that I had my first bad series of fires on the Klamath. A dry lightning storm set nine fires in one township. Ranger Bill Rider, afterward Supervisor of the Shasta and now Deputy State Forester of California, was one of my right hand men, and Mr. McVean, then in charge of special uses, also gave me a visit that summer. Clarence J. Buck, now Chief of Lands in District 6, was my Forest Assistant at the time. Bill Durbin, now supervisor of the Lassen, spent a month with us helping cruise timber.

We held our first Supervisors' meeting in California at North Fork in October,

1906. At this meeting were Supervisors Elliott of the Tahoe; Slosson, Santa Barbara;Bell, Cleveland; Lou Barrett, Plumas; Hogue, Modoc; Mainwaring, Trinity; Shinn, Sierra; Coleman, Shasta; White, Sequoia; Ellis, Stanislaus; James B. Adams, Washington; Coert DuBois, California inspector; and Mr. Lull, State Forester of California. It was a most enthusiastic meeting and welded the men of California together. I recall one instance very characteristic of Coert DuBois. He came to me one noon very confidentially and said "Rich, do you know where I can find a sledge hammer and a crowbar?" I told him and asked him what he wanted them for. "Oh," says he, "I have to interview Supervisor ________and will need tools to pry what I want out of him."

In May, 1907 I received instructions to go to Washington on June 1 for a three months' detail. This stands out as one of the events of my life. I met G. Pinchot and Overton W. Price for the first time and learned more of what the Forest Service really meant. I worked in every office while I was there and made many life long friends during these three months. Chas. H. Flory and I had a room together. C. S. Chapman and Clyde Leavitt were in Cperation; E. E. Carter, Earl H. Clapp, Homans, Woodbury, Flintham, Dana and a number of other young men in Silviculture. Richard Hammatt, afterward Supervisor of the Shasta and now secretary-manager of the California Redwood Association, was just starting as a Forest Assistant. Dave Rogers, just out of forestry school, and several other new Forest Assistants stopped at our hotel, and as an old experienced Supervisor from the field I gave them a lecture on how they could make good in the West. I have many vivid remembrances of those hot days in Washington. On Saturday afternoons Geo Anderson would steer us to the baseball game. We also worked up a baseball team and had games between Operation and Silviculture. I was eager to return to my Forest and as a telegram came from Mr. Pinchot instructing me to attend a meeting at Sacramento I cut my detail short and left for California about the first of August. This was another fine meeting that old time Supervisors will remember as the first meeting in California with Mr. Pinchot.

On July 1, 1908, the big reorganization occurred and F. E. Olmsted was appointed our first District Forester, with headquarters in San Francisco. In the fall I was offered a transfer from the Klamath to the Tahoe National Forest, and on November 14 I took over the supervisorship of the Tahoe, which then included the Eldorado National Forest, from Supervisor M. B. Elliott, who had been transferred to the District office as Assistant Chief of Grazing under John H. Hatton. M. B. Pratt, now State Forester for California, was my Forest Assistant and Evan W. Kelley, now District Forester in D-7, was my foremost Ranger, with Frank Haynie of the present Ogden Supply Depot, as clerk.

We were doing a large timber sale business in 1909 on the Tahoe. Louis Margolin came to help on reconnaissance work and Forest Assistant J. A. Mitchell started his forestry career on July 1, 1909. He will remember the hard deal he got as a raw easterner turned loose among the lumberjacks and how he marked flag poles for chute timbers. W. B. Greely, also did considerable of the marking of the timber on the early sales of the Tahoe.

The first real fire disaster on the Tahoe was in 1910 when in August fire after fire occurred. It was during this season that we had two companies of soldiers on the fires at Foresthill with Roy Headley, then Chief of Operation, and District Forester F. E. Olmsted helping the Tahoe force. It was the lessons from these fires which made us decide that lookouts were necessary, and in the summer of 1911 Banner Lookout was constructed, this being the first lookout tower in District 5. However, it was the Sisson fire of 1914 on the Shasta that really started the District in forming a complete fire organization with fire plans.

The Tahoe National Forest organization was used in the winter of 1913 to form a cost keeping system for the Service. Roy Headley and Clarence Wylie were with our force for almost two months, with District Forester DuBois and Fiscal Agent Thompson in at the finish. That was the start of analyzing ranger diaries, progressive riding, job to job travel and work plans, which have gradually been improved until the present ranger plan study has been worked out.

It was in 1915 that I bought my first automobile. Wm. Gallaher, then Forest Assistant, had bought a Ford and I could see that we would soon have to come to a faster mode of travel, so I also invested in a "Lizzie". During the past 13 years of automobile travel I have worn out three Fords, two Overlands, and am just finishing up on a Buick, - all at seven cents or less per mile.

Looking back over my almost 27 years of forest work in California I think of the many fine men of the Service I have come in contact with and the growth of the Service from a handful of the pioneers to our present fine organization and the gradual enlargement of the National Forests from the Stanislaus, Sierra and Sequoia and the "brush forest" of southern California of 1902 to the present area of 19 million acres.

Many of our fine men of those early days have left us, with their lives completed. Chas. Howard Shinn and Frity Olmsted will long be remembered as our foremost pioneers. Many of our early foresters have used the Service as a stepping stone for other line of work. Out of the force on the Sierra of 1902 I am the last in active service, and yet it seems but yesterday that I sat before the open fireplace at North Fork with Chas. Howard Shinn and his good wife and received my first lectures in forestry.

The traditions of American forestry, started in those early days of the Forest Service by Pinchot and his handful of enthusiastic young men have lasted through the years. I am proud of the progress that has taken place and of the privilege I have had through the best of my life to work with the men that have made up the personnel of the Forest Service from the beginning and to have helped the big men of the Service to accomplish what has been done.

THE EVENT OF THE HOUR IN CONSERVATION

New York Adopts New Plans For State And County Forests

Always progressive in State forestry, New York has now stepped out with another long stride. Two outstanding forestry measures went through the New York State legislature at the present session, and received the approval of the Governor which made them law.

One of these measures tacked a new section on the Conservation law, providing $115,000 for the purchase and development of State Forests in the area outside the "preserve counties". In other words, State forest development now can be extended beyond the counties to which it has heretofore been limited by the law. This probably is just the beginning of a big program of land acquisition, tree planting, and forest development on State Forests outside of these preserve counties. On the new State Forests, the State will have the right to develop the forest lands and also to sell forest products.

The other measure will authorize the State of New York to spend as much as $5,000 a year in any county, if the county matches it with at least an equal amount, in the purchase and development of county forests. This plan by which the State will stimulate and assist the counties in the establishment of county forests is somewhat new, and it is an important and significant contribution to the development of public forest policy. Already about 12 counties in New York have gone into the county forest idea without any assistance from the State, but the new law will greatly widen the possibilities for county purchase and planting of idle lands. The State nurseries will be extended to almost double their present capacity.

The State Conservation Department did not lose any time in getting busy to put the new program under way. Within 48 hours after the State forest bill was signed by Governor Roosevelt, the construction of 400 new seed beds in the forest nursery at Painted Post was started, and the first sowing of seed was expected before the third week in April. The present yearly demand for trees is about 25,000,000, but when the five present State nurseries are developed to capacity, they will give a total nursery inventory of some 150,000,000 trees with an annual output of about 50,000,000.

The sentiment in New York State toward forestry is well illustrated by these two new laws. At the hearings on the bills no opposition was forthcoming, and in both the assembly and the senate the bills passed without a dissenting vote.

The New York State Reforestation Commission also has been continued for another year, and it is now planned to draw up a forestry program for a 20 year period.

YE EDITOR DISCOVERS

The National Forest receipts for the first three quarters of the fiscal year 1929 aggregate $3,901,929.60 as compared with $3,301,600.86 for the same period of the preceding fiscal year, a gain of $600,328.74. This increase is accounted for entirely in timber operations, which showed a gain of $620,597.15. There were also increases in special uses of $1,230.69, water power $5,986.76, and miscellaneous activities totaling $3,287.40. Grazing receipts suffered a loss of $30,773.26 during the period, making a net gain of $600,328.74, as previously stated.

All Districts registered increases except Districts 5 and 8, which sustained losses of $26,852.59 and $4,406.14, respectively. The increases by Districts are as follows: District 1 - $41,820.26; District 2 - $112,197.52; District 3 - $28,620.96; District 4 - $11,980.69; District 6 - $373,725.07; District 7 - $63,242.97.

The fiscal year 1929 has shown a steady gain in receipts since the beginning of the year. The receipts for the first quarter were $167,770.28 in excess of those for the corresponding quarter of the preceding fiscal year. The second quarter's increase was even larger, totaling $259,793.11; while the third quarter's increase amounted to $172,765.35, accounting for the total increase to date of $600,328.74.

It is possible that the Service receipts for the entire fiscal year will reach a total of six million dollars for the first time in the history of the Service. To achieve this goal the receipts for the last quarter must aggregate $2,098,070.40, which is less by $41,763.54 than the receipts for the corresponding period last year, totaling $2,139,833.94.

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Lee Stratton, District Fiscal Agent of the Intermountain District, is in Washington for a detail of approximately one month, primarily in connection with revision of the cost accounting system of the Service, which has been in progress for several months. Stratton will also handle certain D-4 matters from the Washington end during the course of his assignment. He will return to Ogden approximately May 20.

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C. K. Cooperrider of the District 3 Office of Range Research is in Washington for a two months' detail. Cooperrider is working up data in connection with a management project on utilization of browse range. The project covers the Salt River Valley watershed, above the Roosevelt Dam. He will return to D-3 about June 15.

Farmers in Illinois are beginning to talk forestry seriously. The Illinois Farmers Institute decided this year to make forestry a major subject for Institute programs. Commenting on this decision the Illinois Farmer for April 1 says: "We have several millions of acres of land in Illinois which could be devoted to the production of timber. At present these lands either are not used at all or are farmed under conditions of fertility and productivity which make profit impossible .... What to do with this type of land is a major agricultural problem. Anything the Institute may offer in the way of constructive education will constitute a real service."

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By general persuasion, suggestion, and example, foresters have long been endeavoring to induce automobilists to provide their cars with ash receivers. Now California proposes to accomplish this by law. Following a hot debate the State Assembly, by a vote of 46 to 17, passed a bill providing that automobilists should have as a part of their standard equipment receptacles to receive and extinguish cigar and cigarette stubs. The measure was advocated as an aid in the prevention of field and forest fires.

GEO CECIL LEAVES FOREST SERVICE

On March 15, Geo. Cecil, who has been a member of the Forest Service in the Washington, D. C., office, D-6, and D-5 since July 1, 1903, resigned from the supervisorship of the Angeles National Forest to accept the position of executive secretary of the Los Angeles County Conservation Association, affiliated with the Los Angeles Chamber of Commerce. Along with the regret of losing one of our old friends and associates, goes the satisfaction of knowing that in his new job Cecil will be working for the same purpose as the Service and that he can and will greatly strengthen our own efforts.

"Bill" Mendenhall, Supervisor of the Santa Barbara, takes over the Angeles. This is a case of coming back home, as Mendenhall started his forestry career as a guard on the Angeles in 1911.

"Gus" Boulden, who started on the Cleveland some 16 years ago and advanced to the supervisorship of that Forest and afterwards of the San Bernardino, will move up to Santa Barbara. The magnificent distances of this Forest, extending from Monterey Bay to the Ridge Route, should keep Gus more than busy.

Joe Elliott, who has put in over 20 years in the Service and has been supervisor of the Cleveland since 1925, goes to the San Bernardino, where new aspects of the fire and public relations problems can be expected to keep him well occupied.

"Lou" Anderson, Assistant Supervisor of the Angeles, becomes Supervisor of the Cleveland. Anderson started forestry work on the old San Gabriel Reserve 23 years ago.

"Art" Shay, who has been district Ranger of the Mount Baldy District of the Angeles, will be the Fire Deputy on the San Bernardino under Supervisor Elliott.

"Nelse" Peterson, who entered the Service on the Black Hills National Forest, D-2, back in 1907, moves from his "Bill Hart" home at Newhall to the Mt. Baldy district with its large special use business.

The D. F. now confidently expects that the four Supervisors will shortly discover that the financial needs of their previous Forests have been greatly exaggerated, to the detriment of their new domains. He also expects that with these changes, the loss of even so competent a man as Geo. Cecil is not going to mean any let down in National Forest administration in the southland. -- S. B. Show, D. 5 Bulletin.

A LIVING HERBARIUM

By J. L. Peterson, Whitman

Take the life out of plants and then press them as thin as cardboard and our most familiar range specimens don't look the same. There is about as much difference between herbarium specimens and live plants as there is between a live frog and one that has been perfectly flattened on the highway. The herbarium specimen, however, serves a purpose in always being available during winter and summer for observational use. It is also in convenient form for mailing and to be worked on by botanists for specific identification. But it's a corpse at best.

Ranger Rolland Huff, of the Whitman, has worked out a plan so that Forest officers, stockmen, and in fact anyone may learn to know the plants as they grow in their natural environment associated with other living plants. In a fenced sample plot, about a rod square and easily accessible to all, each important plant species is being marked with heavy wire pins. On the top of each pin is fastened a metal number which is plainly visible from the outside of the enclosure. Attached to the fence of the enclosure will be a glass-covered frame in which the number of the marked plants will be listed and brief information given as to the name of the plant, its distribution, flowering period, forage value, etc. The data given will serve as a means of directly identifying each important plant in the sample plot enclosure.

This will indeed be a living herbarium. It will be of particular value to the field men, stockmen, and recreationists in learning to know the principal plants on the Forests. This plan of living herbarium plots will be extended to each Ranger District on the Forest.

VILLAGE FOREST MANAGEMENT PLAN

A copy of a Forest Management plan for a small village forest of approximately 125 acres in the Oldenwald near Darmstadt, Germany, has been received from Dr. Schenck. The forest is divided into 3 blocks and these into 24 compartments. The timber is managed on rotation of 100 years and consists of Scotch pine in all but one compartment, which carries some beech. In making the plan the forester traverses each compartment and asks himself the question "what is to be done in this compartment in the next ten years, and how much timber of the various kinds may be obtained by way of thinning or by final cut." The plan consists of 11 pages, one of which is a map, and the plan is largely figures. However, pages 7 to 11 details by compartments in tabular form, the descriptions, the measures to be taken during the 10 years (a sample of which is "final cut, leaving 40 standards per hectar, regeneration in narrow strips running east and west, each 4/10 ha. pine yield and beech simultaneously planted, also fir in southern sections planted in advance"), age of stand, yield, etc. The plan is of considerable interest.

NEW CAMERA TAKES IN LARGER AREAS

An important stride in aerial photography has been made by the invention of a new camera that will take in 225 miles of territory in one exposure. The camera is composed of eight prisms arranged in a circle around a central lens. The camera thus simultaneously takes nine pictures at one exposure and focuses them on a single film. An aeroplane flying at a height of three miles with a 13-18 centimeter camera has a focal distance of 20 centimeters will photograph on a single plate an area of nearly five square miles. With the new camera fitted in a plane flying at the same height an area of 225 square miles can be pictured. - N. Y. State College of Forestry News Letter.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII NO. 18 WASHINGTON, D. C. May 6, 1929

SHALL WE OR SHALL WE NOT?

By G. E. Mitchell, Chelan

There has been much said lately about the merits and demerits of slash disposal, and the champions of each side have gone down the line with arguments and illustrations. Some have argued that our methods of slash disposal are too costly; some that it is more economical to give an area intensive protection for ten or twelve years than to pile and burn; some claim burning broadcast is injurious to reproduction and tree growth, and others say vice versa.

The following may be of interest to those who deal in this phase of the work:

For the past thirty years the Gamble Lumber Company and other small sawmills have been operating near the head of Swamp Creek. They have cut all the way from 500 M. to 2½ million each year. The timber is typical yellow-pine type, with a site about III and a good percentage of overmature. The stand has averaged from 3 to 8 M per acre.

Practically nothing has been done to the slash. It has lain unmolested where it fell and each year's cut has increased the amount. That which was cut 25 or 30 years ago has decayed to quite an extent, although much of it still retains the same position as when it fell.

All conditions seem to be quite favorable to tree growth, especially the germination of seed. The entire cut-over area in this vicinity has a splendid stand of reproduction which would practically average Grade A for the entire area. It seems thrifty and has made a good growth each season. It would be classed as 10 per cent large saplings, 70 per cent small saplings, and 20 per cent seedlings.

The cutting has been done on a selective basis, which in many places compares very closely with the practice of cutting yellow pine as followed by the Forest Service. The larger immature trees were cut, but there still remained a good stand of immature trees, averaging from 10 to 14 inches d. b. h. and from 70 to 100 feet in height. Especially on the areas cut by the Gamble Lumber Company was there a good stand of immature timber.

Gamble has been reluctant to burn his slash, feeling that it would destroy the advanced growth and reproduction that he has been holding for future values. State wardens have recognized his attitude and not been insistent. But to protect the National Forest they burned a considerable area along three miles of boundary. This was broadcast burning in the fall, at a time when the fire ran readily. It looked bad right after the burn, but actually a pretty fair stand survived.

In July, 1928, lightning started a fire on State land, three miles from any of Gamble's cut-over land. It was reported to the State men, and they took action immediately. It was a Class A fire. About two days later the fire was reported running again, and the State immediately took action a second time. Through some medium unknown to the writer, Gamble heard of the fire and immediately started his sawmill crew of some twenty men to it. After the men had started, Mr. Gamble called the dispatcher at Twisp and learned that the State crew was handling the fire, so he overtook his crew en route to the fire and brought them back to the mill.

The weather happened to be extremely favorable for fires, and through some turn of fate the fire got away from the State crew and burned into the Gamble slashing. You can imagine the rest. The slashing bone dry; thick reproduction; rolling, unbroken surface; humidity low, — about 18 per cent, and a good wind.

It was only by strenuous effort that the 75 or 100 men called out stopped the blaze before it reached the mill and box factory. All man-power was concentrated at that point, and the fire was allowed to burn unhampered toward the south, where it struck the open, grass country and ultimately covered about 18,000 acres, 6,000 acres of which was grass land. But by using the numerous logging roads as backfiring lines and swiftly dropping back to the next road when the fire crossed the line, the fire was stopped on the north front and the mill was saved.

No spruce-fir type laden with dry moss ever burned with any more speed or fury than did this yellow-pine type of forest. Nor did any crown fire in the alpine types ever leave more desolation in its wake.

In most places the reproduction was completely burned, leaving only a few blackened stubs, 6 to 10 inches high. The fine stand of immature pine which would make a future crop in 25 to 30 years was all killed, and the whole area is now in a condition where artificial reseeding will have to be done if the area is to continue as timber-producing land.

Some of the interesting side lights are that on the west side the fire was practically stopped by two miles of sheep driveway and the three-mile strip where slash had been broadcast burned four years ago. On the latter area the fire was held to the ground. At least 60 per cent of it went out without trenching. Not a single immature tree was burned, and a fairly good stand of reproduction remains.

But these are not the only results, — the Gamble Lumber Company has been very busy burning slash since the fire season closed. They have cleaned up the area around the mill and are burning as far back along the roads as they can. All practical protection is given the reproduction, because Mr. Gamble still has faith in a future timber crop. He intimated that when the season's work was over he would start plans for restocking his burned-over land.

THE EVENT OF THE HOUR IN CONSERVATION

Wisconsin Proposes Broad Forestry Program

Wisconsin is on the road to a definite and farreaching forest program. An Interim Committee on Forestry and Public Lands has just submitted a comprehensive and scholarly report to the Wisconsin Legislature, which if adopted will put Wisconsin on a sound forestry basis. Some of the noteworthy recommendations in this report are:

That the Government be authorized to purchase up to 750,000 acres instead of the present 500,000 acres now authorized.

That community forests be established throughout the State with State assistance in starting and developing them.

That all State lands be managed according to good forestry methods.

That an intensive and extensive land classification be established as a basis for zoning land.

That a State forest experiment station be established in conjunction with the Agricultural Experiment Station.

That a State fire warden be appointed to serve under the State Forester to be responsible for fire protection activities.

Commenting on this report, the Forester said:

"The Committee has pointed out that under present conditions, Wisconsin's present stand of merchantable timber may not last more than 12 years longer. Millions of acres in the State, however, are capable under sound forestry management of growing unending crops of timber. Timber growing is the best, and at present the only, productive use to which much of this land can be put.

"Land utilization is a problem demanding increasing attention throughout the United States. Too many idle acres are contributing nothing to the economic welfare of the State and the communities in which they are located. Too many acres are not paying their way because they are not put to their best use. In the 17 northern counties of Wisconsin, more than 4½ million acres of land were tax delinquent one or more times during the 7 years previous to 1927. Any effective forestry program must provide means for public management of those lands which cannot be made to pay under private ownership, and for every encouragement to forestry that can be undertaken under private ownership. As the Committee points out, tax delinquency in the end must be overcome by making the land once more productive, whether in farms or in public or private forests.

"The Committee's recommendation that both extensive and intensive land economic surveys be proceeded with is a sound approach to this land problem. The Committee's plan for the management of State-owned lands in accordance with good forestry practice is to be commended. Authorization for larger Federal purchases of forest land will make possible more effective administration of the National Forests within the State and will help toward bringing about the beneficial utilization of the 18 million acres of land in need of forest management. State assistance in the establishment and development of community and county forests will further contribute to the solution of the problem. The recognition of the need for scientific research in forestry, embodied in the proposal for a forest research unit to be attached to the University, is especially significant."

ELEVENTH SOUTHERN FORESTRY CONGRESS

By A. B. Hastings, Washington

On April 4-5 New Orleans was the scene of probably the most generally attended meeting of the Southern Forestry Congress since its organization in 1916. More than 300 representatives were registered and they came from all of the 16 Southern States. Nearly the whole week was devoted to discussion of important forestry matters by various groups interested in the South's progress in forestry, including an all-day session of the Southern State Foresters on April 3, at which these officers formed a permanent organization; a conference of Southern Extension Foresters, also on April 3; a meeting of the Southern Section of the Society of American Foresters; and a field day at Bogalusa. Over a hundred of those attending the Congress were delightfully entertained at Bogalusa by the Great Southern Lumber Company being driven through the many thousands of acres of pine plantations.

The President of the Congress, B. F. Smith of the Industrial Lumber Company of Elizabeth, Louisiana, aimed to make the meeting a means of bringing to the attention of the people of his State and region specific information in regard to the practicability of timber growing on the forest lands of the South. The program of addresses was made up with this especially in view. The Forester analyzed and discussed the general forest needs of the South and other foresters went into technical matters of forest protection and development. Mr. Henry Hardtner, of Urania, Louisiana, and representatives of companies like the Great Southern and the Crossett Lumber Companies gave to the Congress the benefits of their experience in placing their properties under some form of forest management. (10,000,000 trees were planted in Louisiana in 1928). Mr. James Fowler of Soperton, Georgia, explained how forest properties can be profitably developed on the farm. Senator Ransdell struck a note of inspiration. The stockmen were represented on the program and Dr. Fairchild spoke on forest taxation. The Congress made a real contribution to the advancement of forestry particularly from the point of view of "the study of cases." All meetings were well attended.

The Southern Forestry Congress was organized in 1916 and immediately directed its efforts to promoting the establishment of State forestry departments in the several Southern States. It has had a large share in the establishment of such departments in Alabama, Georgia, Mississippi, Oklahoma, Missouri, Florida, and South Carolina. The President in his opening address expressed the belief that in spite of the fact that some of the important original objectives of the Congress had been reached the most important field of work lay ahead. Resolutions passed by the Congress brought this out in a striking manner, one of them calling upon Congress and the Governors and legislatures of the 16 Southern States, to provide for the work adequate legislative and financial support. In support of this recommendation the resolution stated that only one-third of the 214 million acres of private and public forest lands in these States are at present receiving any systematic protection, that funds available are entirely inadequate to protect even the relatively small acreage included in systematic protection areas, and that the public has a large measure of responsibility in the economic development of the great forest resources of these States. Another resolution embodied a plan for enlarging the organization of the Congress so that it might function between meetings through the establishment of committees or groups in each of the 16 States, such committees to be responsible for informing the Congress as to progress being made and as to programs of development needed by the several States. This plan will, it is understood, be considered at an early meeting of the Executive Committee. It offers great promise in connection with the formulation of constructive forestry policies and more adequate viewing of the needs of the whole forestry problem with which the South is faced today.

"O SACRED SOLITUDE! DIVINE RETREAT:

By W. I. Hutchinson, D. 5

Mr. Kneipp's fervent appeal in the Service Bulletin of Feb. 11, for a new and better name with which to designate the newly created "sanctum sanctorum" of the National Forests, to which the hardy lover of the great outdoors may retire and commune with nature, reminds us of a story.

Rastus was in search of a new cognomen for his hound dog and finally hit upon the name "Moreover." When questioned as to its origin, he stated that it was the name of a dog mentioned in the Bible, and in proof of his assertion quoted from Luke 16:21: "Moreover the dogs ......"

But what better name do we want than Wilderness Area, in which is combined all the vitamines of outdoor life which appeal so strongly to the so-called "red-blooded Americans"? What matters it if the wilderness" does have trails, telephone lines, and a fire guard peacefully perusing the latest edition of "Snappy Stories"? What is civilization plus to a Forest Service officer may be pristine wilderness to the average city man and woman. The "Wild Man of Borneo" came from Ohio, but no one ever questioned his identity.

Let's not make the usual mistake of passing up a good name which has attractiveness and high publicity value, just because conditions on the ground don't exactly fit the ideas and definitions of the lexographers.

A recent press release on Wilderness Areas in the National Forests of California has already resulted in 635 column inches of newspaper publicity and over 70 per cent of the editors used the word "Wilderness" in the headlines. "Primeval" and "virgin" were a poor second, and "wild forest" and "last frontier" also ran. Not a single editor used the synonym "primitive."

Picture the embarrassment of an old-time Ranger on being quizzed by some sweet young thing in Hollywood knickers: "How do I get to the High Sierra Primitive Area?"

HOBO TACT

By D. J. Stoner, Mount Baker

En route to and from the City of Seattle, quite a few knights of the road are wont to stop at my ranger station and look around. With the usual opening formalities over with, they invariably ask for a bite to eat - and invariably get it. With few exceptions they have worked on a fire some place - sometime - and the conversation makes a turn to shop talk. Between mouthfuls they are profuse in their praise of the Rangers for their deeds on the fire line and they tactfully make it a personal issue by saying "You Rangers". After all these wreaths of roses what can a fellow say but - "havva 'nother cuppa coffee". They never linger long after they have had their bite, but with a nondescript sort of pack they are on their way again leaving this gracious host (perforce) wondering whether we guys are a good bunch or that fellow knew how to talk.

I wonder what they tell the next fellow down the line about meal time?

NATIONAL FOREST FUR FARMING

By J. H. Hatton, D. 2

The District 2 cooperative agreement with the State Game Department of Wyoming provides, among other things, the following:

> "As informational aid to the State, applications for permits authorizing the trapping of fur bearing animals within the Bighorn, Shoshone, Washakie, Medicine Bow and Hayden National Forests, and that portion of the Black Hills National Forest which is located in the State of Wyoming, will be first submitted to the Forest Supervisor concerned for comment."

Trapping for furs on the Shoshone Forest has developed into an interesting local industry one of the principal features of which is the idea of maintaining a sustained yield The Supervisor of the Shoshone has segregated the different portions of the Forest into so-called trapping districts and individuals, or partners, are assigned certain districts the same as an individual grazing permittee may be assigned a part of the Forest for grazing. It has resulted in more or less of a feeling of proprietary interest on the part of individual trappers in their trapping areas to the extent that they make an effort to regulate their trapping on the basis of maintaining a sustained yield in furs. For instance, if the resource appears to be unduly declining, they will lay off trapping for a season and allow the species to recuperate.

It is understood that similar plans are followed in a couple of Forests in D-1. The idea is worth extending to forests where fur bearers constitute an important local resource and where similar satisfactory arrangements with the State Game Departments can be made.

POSITION OPEN IN TEXAS FOREST SERVICE

State Forester E. O. Siecke of Texas is looking for a man to fill the position of State Extension Forester. He is prepared to pay an entrance salary of $3,000 to a man well qualified for the position. In case it becomes necessary to employ a younger and less experienced man the entrance salary will be at a lower figure, with an increase to $3,000 if his first year's work proves satisfactory.

YE EDITOR DISCOVERS

Major Stuart has been named by the Secretary of Agriculture as a member of a committee from the Department to confer with the National Arboretum Council. The National Arboretum, authorized by Congress last year, will be developed as an educational, scientific, and recreation center and as a "living library of the plants of the world." The site selected, which is at Anacostia, D. C., takes in a wide variety of soil conditions and includes both the hilly and marsh types. Some of the flats along the Anacostia River, a branch of the Potomac, are to be reclaimed. The Arboretum will be an important adjunct to the scientific activities of the Government, particularly in the Department of Agriculture. Other members of the Department Arboretum Committee are: Dr. A. F. Woods, Director of Scientific Work,; Dr. W. A. Taylor, Chief of the Bureau of Plant Industry; and Dr. F. V. Coville and Dr. W. T. Swingle of the Bureau of Plant Industry. The National Arboretum Advisory Council is made up of a group of prominent scientists, educators, and conservationists, headed by Frederic A. Delano of the National Capital Park and Planning Commission.

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After almost four years of attempted administration District 3 has come to the conclusion that the dual management of the Fort Huachuca Military Reservation is so impracticable that the continued retention of this area within the Coronado National Forest is undesirable. The Forester has acquiesced in this view and a proposal shortly will be submitted to the Secretary of War that the area be restored to the exclusive jurisdiction of his Department. Thus one by one the bright galaxy of Military Reservation National Forests has faded away until only four areas will hereafter be under National Forest management, namely Brady in Michigan, Meade in South Dakota, Pole Mountain in Wyoming, and Fort Wingate in New Mexico.

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One of the worst of the correspondence schools which claim to make first-class forest rangers while you wait is now under fire of the Federal Trade Commission. The commission has filed a complaint against the Norton Institute of Denver, Colorado, charging misrepresentation as to prices, endorsements, etc.

Forsling of the Great Basin Range Experiment Station is in Washington on a short detail to the Office of Range Research. Forsling says that while here he will take up for consideration two major lines of new work. One of these is a study of the spring range problem in Utah. There is a shortage of range of this character in the region and existing areas are heavily utilized and in need of better management. The other problem under consideration is erosion on granite soils in southwestern Idaho. Serious erosion has started on some of the watersheds contributary to important irrigation projects and better methods of management of the range and measures to control erosion are necessary.

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John S. Boyce, Director of the Northeastern Forest Experiment Station, will leave the Service this fall to join the faculty of the Yale Forest School as professor of forest pathology. Before taking his present position in the early part of 1928 Doctor Boyce was for eight years head of the Portland, Oregon, Office of Forest Pathology, Bureau of Plant Industry.

EDUCATIONAL VALUE OF NATIONAL PARKS

When is a park a National Park? How may National Parks be used for educational purposes? These are questions answered by a committee of eminent educators appointed a year ago by the Secretary of the Interior for a study of educational problems in the National Parks. The members of that committee were: Harold C. Bryant, Hermon C. Bumpus, Vernon Kellogg, John C. Merriam, Frank A. Oastler. Their report was recently presented to Secretary Wilbur.

"National Parks," it says, "must be clearly of importance to the Nation as a whole. Their support and maintenance from Federal funds can be justified only on that basis. Where the special characterists are of less than national significance parks should be supported by local interests.

"The distinctive or essential characters of National Parks," the report continues, "lie in the inspirational influence and educational value of the exceptional natural features which constitute the reason for existence of these parks. Outdoor recreation is recognized as an important factor in National Park administration, but it is not the primary purpose, and can also be enjoyed through abundant opportunities furnished elsewhere.

"The primary function of National Park administration concerns the use of the parks for their inspirational and educational values. The educational program in National Parks should relate itself primarily to the essential features of the parks. Since the greatest possibilities for education arise through inspirational sources these exceptional opportunities should be developed as fully as possible.

"It should be the primary object of the educational work to make possible the maximum of understanding and appreciation of the greater characteristic park features by the visitor, together with the stimulation of his thinking. Educational work should be reduced to the lowest limit which will give the visitor opportunity to discover the things of major interest, and to inform himself fully concerning them if he so desires.

"The specific subjects toward which education in National Parks should be directed comprises major problems of physical, geological, biological, and historical science represented there. The program should also include consideration of the beauty and meaning of nature in the aesthetic and spiritual sense, as illustrated in every expression of the outstanding phenomena represented."

The report makes the following specific recommendations:

"There should be an advisory body of five to seven of the ablest men conversant with national parks, appointed by the Secretary of the Interior, on nomination by the Director of National Parks, to serve without salary, whose duty it shall be to advise the Director of National Parks on matters pertinent to educational policy and developments in national parks.

"There should be a Division of Education coordinate with other divisions of the National Park Service directed by a man with the best scientific and educational qualifications who shall administer the educational program in the parks."

FOURTH UNIT OF SMOKE EXCHANGE READY FOR CONSIDERATION

One of the big problems with which the Forest Service has had to deal for the past 20 or more years has been the destruction of tree growth and damage to range within the Deerlodge National Forest, which has resulted from the operation of the smelter at Anaconda, Montana. The fumes discharged from this smelter are of such high arsenical content that neither timber growing nor grazing is practicable within their range. An attempt was made in 1915 to meet the situation by the appointment of a smoke commission which included many prominent engineers, but the changes made upon recommendations of this commission did not cure the situation.

Since the company owns a large acreage of highly productive timber land scattered through the National Forests of western Montana, the conclusion finally was reached that the most equitable way to meet the situation would be through a land exchange under which the company would acquire title to the fume damaged territory and the United States would acquire title to an equal value of highly productive timber lands interspersed among National Forest holdings in other Forests. Respective areas involved would amount to about 135,000 acres on each side.

Circumstances made it desirable to consummate these changes by a series of steps rather than as a single transaction. Reports on the fourth unit have just been received and involve the reconveyance to the United States of 28,943 acres of land in the Lolo, Missoula, Cabinet, and Kootenai Forests, in exchange for 26,632 acres of fume damaged land in the Deerlodge. When this exchange is consummated the acreage reconveyed to the United States will total 70,878 acres and the acreage acquired by the A. C. M. Company will total 66,996 acres. - L. F. K.

DR. TRUE DIES

The death of Dr. Alfred C. True on April 23 took from the Department of Agriculture one with whom the Forest Service was for many years in close touch. His work of more than 35 years was as a Director of Experiment Stations for about 20 years and then Director of the States Relations Service from 1914 to 1923. Previous to being appointed Director of Experiment Stations he served for several years as editor in that office. Under his leadership this branch of the Federal Department expended to large proportions. It included the experiment stations, the cooperative agricultural extension work, home economics and agricultural instruction. Thus he was a great organizer and leader in agriculture.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII No. 19 WASHINGTON, D. C. MAY 13, 1929.

RETIREMENT POLICY

As the retirement cases have come up for action the need for a Service policy has become increasingly apparent. The Forester designated a committee which worked out a policy, approved in the following form:

POLICY OF THE FOREST SERVICE RELATING TO RETIREMENT FOR AGE

Under the provisions of the Retirement Act of May 22, 1920, as amended, the following principles respecting retirement of superannuated employees are prescribed for the guidance of administrative officers.

Purpose of Act

The underlying purposes of the enactment were (1) to increase the efficiency of the public service, (2) to reduce operating costs, and (3) to provide humanely through annuity for superannuated employees. These principles are fundamental and must be given most careful consideration in all instances.

Factors purely personal to the employee such as financial condition, domestic responsibilities, and the like, are outside the purview of the law. Neither does authority exist to take into account the amount of the annuity though admittedly inadequate, length and quality of service, etc.

Under no circumstances will an employee be recommended for retention unless clearly to the advantage of the Government to do so.

Rights of Employees Attaining Retirement Age

All employees with fifteen years of annuitable service have the legal right to voluntary retirement upon reaching the age limit specified for their respective positions. The law directs consultation by the appropriate administrative officer with those approaching retirement age as a step preliminary to determination of official action. When the employee is found to desire, or is agreeable to retirement, merely a statement to that effect in the report "Eligibility for Retirement" is required.

In cases where the employee requests continuance, the formal report form must so state. In such event, if the facts, considered in light of the policy outlined herein, fail to justify administrative action in line with the employee's wishes, a full and complete statement must be submitted, setting out the advantages to accrue to the Government by virtue of his retirement. Such statement must be predicated on the employee's physical or mental inability, or both, or other personal deficiencies, to perform the duties of his position in conformity with established standards. The statement, together with the three last efficiency reports of the member, will accompany the adverse recommendation for consideration by the Secretary. In close or doubtful cases of this character consideration by the Forester should be had before advising the employee respecting the action to be recommended.

Rights of Other Employees

When considering superannuated members for separation or retention, the rights of other deserving employees in line for advancement must be carefully weighed. Under the law they are entitled to preference except when retention of the older member is clearly to the best interests of the Government.

Separation

The law assumes retirement to be generally desirable from the official viewpoint when employees reach the specified age limits. On the other hand, it does not make separation from the payroll automatic. It recognizes the wide variation in different individuals in physical vigor and mental alertness, as well as official exigencies that exist in some instances, and accordingly vests in the Secretary the right to exercise discriminatory judgment in the consideration of individual cases. The Secretary's determination in the matter of separation is conclusive.

Retention

Only a small percent of Service employees after attaining retirement age are qualified to handle a reasonably full-size job within the prescribed performance standards. This condition applies in all walks of life, in the commercial world as well as in the Government, and should be accepted as a pretty definite guiding factor. On that premise only the outstanding employee should be considered eligible for retention. In all cases where retention is advocated, the formal papers will be accompanied by a letter from the District Forester explaining the basis of his recommendation in sufficient detail to permit of a correct decision by someone not acquainted with the employee.

Test

Recommendation for continuance in the Service presupposes an advantage to the Government. Except as explained in the paragraph which follows headed "Without Test" such advantage can only be reflected by an impersonal consideration of the efficiency and health of the employee in conjunction with his age. The following table will be used in determining an employee's eligibility for recommendation for continuance, a hypothetical case being given for the purpose of illustration:

Factors	Averages	Relative Weights	Product of Averages multiplied by weights
Age	65	1	65
Health	78	1	78
Current Efficiency Rating	90	3	270
Summary	82.6	5	413

With respect to the age factor 65 shall be the uniform rating. The health factor is, of course, a variable, as is the efficiency rating factor. In determining the allowance for health, consideration should be given to the physical condition and mental alertness of the employee as compared with the average middle aged person. An employee will be considered ineligible for continuance unless he attains a rating of better than 82½ per cent, which is the mean between 100 per cent and 65 per cent and represents average qualities, failure to attain such rating constituting prima facie evidence that retention would not be to the Government's advantage.

Without Test.

Exception to the rule defined in the second preceding paragraph is authorized only when it is distinctly to the advantage of the Government, for reasons other than the personal attributes of the individual, to continue a member on the rolls. For example, such an employee may be retained who possesses special knowledge, skill or standing in an important field of work to the extent that the Service or district is largely dependent upon him for the execution and development of the particular activity.

Renewal

The same rules governing initial extensions will apply when considering applications for renewal. Under the law not more than two extensions may be allowed, not to exceed two years each.

Age Groups

The policy herein stated shall apply with equal effect to the 70 and 62-year age groupings. Rangers are allocated to the 62 year group on the premise that as a class they become disqualified for the efficient performance of their duties at 62 to the same extent that members engaged upon less arduous activities become superannuated at 70. Exceptional cases should therefore be expected to arise at about the same ratio in both groups. The treatment of such cases in each class must be handled uniformly so that the percentage of extensions in one group will not become disproportionate with the other.

Field Positions Other Than Ranger

Occasional cases will develop when field-going men such as Supervisors, Assistant Supervisors, Lumbermen, Range Examiners, etc., become superannuated before attaining the age of 70. When such contingencies arise retirement will be recommended in the regularly prescribed manner. Recommendations of this character require special approval by the Civil Service Commission. They must be accompanied by the strongest possible statement of facts to permit of adequate presentation to the Commission by the Forester.

THE EVENT OF THE HOUR IN CONSERVATION

Marginal Land Problem Gets Administration's Attention.

Back in the days when "farm relief" first became a national cry, and everyone was agreeing - as they still are - that "something ought to be done", the Forest Service advanced the suggestion that marginal lands might enter into the problem. Converted to tree growing, these lands which could not be farmed profitably in the lean years might increase the Nation's forest resources to good advantage while the surplus production of farm crops would be decreased. Today the marginal land problem is getting official recognition. President Hoover, in his first message to Congress, touched upon it, as follows:

"There was a great expansion of production from our marginal lands during the war, and upon these profitable enterprise under normal conditions can not be maintained. Meanwhile their continued output tends to aggravate the situation. ....

"....the board [proposed Federal Farm Board] should be organized to investigate every field of economic betterment for the farmer so as to furnish guidance as to need in production, to devise methods for elimination of unprofitable marginal lands and their adaptation to other uses; to develop industrial by-products and to survey a score of other fields of helpfulness."

Secretary of Agriculture Hyde sounded the same note in his testimony on the farm relief bill before the Senate Committee on Agriculture and Forestry: "We have need," he said, "for a larger study and for action in the determination of better use of marginal lands and their devotion to either forestry or pasturage." At the same session of the Committee, L. J. Tabor, Master of the National Grange, suggested a national land policy which should include forestry and conservation, but should not increase productive acreage.

The House "farm relief" bill which was launched in the current special session of Congress, and which already has passed the House by an overwhelming majority, indicates that the seed has sprouted. Section 4 of the bill provides, among other things, that the proposed Federal Farm Board will be empowered to make investigations and reports upon "land utilization for agricultural purposes" and "reduction of the acreage of unprofitable marginal lands in cultivation."

Two members of the Forest Service recently made some noteworthy contributions to the marginal lands discussion. In an article on "Forestry and Farm Relief" in the March, 1929, issue of The United States Banker, W. N. Sparhawk outlines a program for federal acquisition of marginal land as a means of helping to overcome agricultural depression. Raphael Zon, in an article entitled "Forestry and the Agricultural Crisis" in the Annals of the American Council of Political and Social Sciences for March, holds that the dedication to timber culture of all land which can not be profitably farmed and which is adapted by nature for that purpose is a sound national land and forestry policy, and he predicts that the time will come when some 480,000,000 acres will be definitely withdrawn from any land settlement and devoted effectively to timber production.

"IN THE BEGINNING"

To many of us, the Forest Service has always been an established thing; a thing which took us in and perhaps gave us our first job. To John H. Hatton, Chief of Grazing, District 2, it seems more like a part of his own handiwork, for he was a forester in the employ of the Federal Government before there was a Forest Service, and in those early days, contributed in no small way towards its establishment as it stands today. Since July 1, 1901, he has served continuously in the cause of forestry.

After helping to stake out the Nebraska National Forest and planting project and a number of other "reserves" all over the West, which since then have become National Forests, he had a hand in setting up administration and examining Rangers and Supervisors, in helping to organize the Forest Service in 1905 and in reorganizing again in 1908. During this time and since then, as a pioneer forester, he played an important part in inaugurating methods and practices, and, in doing so, put his personal stamp on many policies in effect today.

In 1905, on the occasion of the transfer of the Forests to the Department of Agriculture, he recorded a statement which shows the conviction and determination with which the early foundation stones of the Service were laid. Such factors undoubtedly in a large measure account for the success the Forest Service has had since that time. Fancy the satisfaction with which a man of 27 years' service in the cause of Forestry can today look upon his own statement, which contemplated not only the forests but all our natural resources:

"The Forest Reserves (as they were then called) with necessary modifications in policies from time to time to meet changing conditions and needs, are here to stay. Their primary objects are protection and use as against abuse and prodigal waste. They are not the promptings of fairy dreams or perverted sentiment, but they are the products of cool business judgment and methods. They consume the interest on the principal or the coupon on a bond leaving the bond itself intact. They represent a public policy which, while it seeks to protect and foster the present, is not so narrowly confined, but looks to the remote future, and generations, yet unborn, are going to reap the benefits of its wisdom and timeliness." - District 2.

LAW OF COMPENSATION IN CALIFORNIA

By L. F. Kneipp, Washington

A news item recently has appeared in eastern papers to the effect that the California poppy which hitherto has gilded the fields and hills of that delectable region with a riot of golden glow rapidly is disappearing, and its disappearance plausibly enough is ascribed to the multiplicity of automobiles which have widened the range of that multitude who believe that no chance should be overlooked to pluck or uproot the beauties of nature and carry them home, or throw them away en route.

But right here is where nature's law of compensation begins to operate. Coincident with the diminution of the poppy there has become apparent a spread of that other member of the plant world known as the puncture vine. Since the only thing subject to puncture which is now regarded as important is the automobile tire, the question arises as to whether nature is not setting up a safeguard to the poppy by which that beautiful flower may be preserved from extinction at the hands of marauding humans.

However, the specific interest of the Forest Service lies in the suggestion made recently by a representative of the California Development Association that steps be taken to eradicate the puncture vine on the National Forests. Such eradication work is now being carried on by counties and the owners of private lands at a conservatively estimated cost of $150,000 per annum, but fears are expressed by the agencies making these expenditures that if similar work is not also conducted on the adjacent National Forest lands they will become sources of reinfestation which quickly will nullify the results of the expenditures made on other lands. This is the same argument which has heretofore been made in the elimination of ground squirrels in California, apparently with considerable logic and plausibility. It now devolves upon the Service to determine whether the situation is one which demands affirmative action by the Federal Government, and if the answer is affirmative the Service then will have to cooperate no doubt in securing from Congress the appropriations necessary to carry on the work.

YE EDITOR DISCOVERS

The Biological Survey is going in for a systematized program of land acquisition. Secretary Hyde has authorized creation in the Biological Survey of a new unit to be known as the Division of Land Acquisition. Its purpose, according to Paul Redington, Chief of the Bureau, is "to ascertain by examination of the numerous potential areas to be found throughout the United States those that are best adapted for refuges, to make appraisals in order to determine their character and value, and to conduct other activities incident to their acquisition with the funds made available by Congress from time to time." This new activity was authorized by the Migratory-Bird Conservation Act, approved February 18, 1929. The division will begin functioning July 1 and will have Rudolph Deiffenbach, Senior Land Valuation Engineer, for its Chief.

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A new two-reel movie "Selective Logging" was shown to all members of the Washington office Wednesday, May 1, at the Family Meeting in the New National Museum. This movie, which was taken in the Lake States, brings out the advantages of taking out only the larger trees in a stand. Striking comparisons between the logging and milling costs and the returns obtained from 9 inch and 24 inch logs were made by means of animated charts and the effect of selective logging as contrasted with clear cutting was shown by shots taken in the woods. This film ought to be a mighty effective piece of educational material to use in reaching operators and timberland owners.

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Under date of March 12, the Comptroller General rendered a decision to the effect that express shipments over land grant railroads are subject under the law to the same reduction as freight shipments. This order became effective March 1 and will result in an appreciable saving in official funds. The Service makes in the neighborhood of 5000 express shipments annually, about one-half of which move over land grant roads. The reduction allowed the Government by the carriers runs as high as 30 per cent, a goodly percentage of Forest Service shipments being entitled to the maximum discount.

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William T. Cox has resigned as Superintendent of the Upper Mississippi River Wild Life and Fish Refuge to accept appointment with the Government of Brazil for the purpose of organizing a National Forest Service for that country. Cox served in the Forest Service from 1901-1911, when he resigned to become State Forester of Minnesota.

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John D. Jones, in charge Public Relations D-3, is in Washington on a two months' detail to the Division of Information.

LARGEST TREES

By H. J. Lutz, Allegheny For. Exp. Sta.

Which tree in the eastern United States attains the greatest diameter? The following account of F. A. Michaux, the botanical explorer, of his travels to the west of the Allegheny Mountains early in the Nineteenth century gives us an answer.

On a trip from Wheeling, West Virginia, down the Ohio River to Marietta, Ohio, "thirty-six miles before our arrival at Marietta we stopped at the hut of one of the inhabitants of the right bank who shewed us, about fifty yards from his door, a palm-tree or platanus occidentalis, the trunk of which was swelled to an amazing size; we measured it four feet beyond the surface of the soil, and found it forty-seven feet in circumference. It appeared to keep the same dimensions for the height of fifteen or twenty feet, it then divided into several branches of a proportionate size. By its external appearance no one could tell that the tree was hollow; however I assured myself it was by striking it in several places with a billet. Our host told us that if we would spend the day with him he would shew us others as large, in several parts of the wood, within two or three miles of the river. This circumference supports the observations which my father made, when traveling in that part of the country, that the poplar and palm are, of all the trees in North America, those that attain the greatest diameter.

"About fifteen miles up the river Muskingum, in a small island of the Ohio, we found a palm-tree, or platanus occidentalis, the circumference of which, five feet up from the surface of the earth, where the trunk was most uniform, was forty feet - four inches, which makes about thirteen feet in diameter ---- These trees generally grow in marshy places. The largest tree in North America, after the palm, is the poplar, or liriodendron tulipifera. Its circumference is sometimes fifteen, sixteen, and even eighteen feet".....

NATIONAL COMMITTEE ON WOOD UTILIZATION MEETS

Restocking of forest resources through the adoption of improved wood-using practices was an important feature of the annual meeting of the National Committee on Wood Utilization held in the Department of Commerce April 29. The entire range of wood-producing and wood-using industries, the architectural and engineering professions, as well as Federal and State agencies interested in forest conservation, were represented at the meeting. Secretary of Commerce Lamont in a message to the conference said that true conservation of forest resources in the modern sense involves the application of "packing house methods" in the utilization of wood to the end that private capital may be attracted to the growing of timber as a sound investment. The coordination of the raw material policy among wood-using industries so that one branch would use what was waste product for another was advocated. The committee is making a nation-wide survey of non-utilized wood available at sawmills and wood-working establishments. Two States, Virginia and North Carolina, already have been covered.

Major Stuart, who is Vice Chairman of the National Wood Utilization Committee, made an address in which he pointed out that back of all questions of efficient utilization of wood is the problem of the productive use of its ultimate source - the forest land. "We must bear in mind," he said, "that .... unless our forest land is made and kept productive, unless intensive utilization is linked with intensive forest protection and management, the benefits of intensive utilization in itself will be short-lived. It will avail us little in the long run to develop a superior technique in logging, in the management of manufacturing plants, and in the utilization of forest products, unless at the same time we provide the necessary supplies of raw material." Major Stuart presided at the conference.

"CULTIVATING" A FOREST

By W. F. Ramsdell, D. 9

One of the largest National Forest cut-over areas in the western yellow pine type of District 6 is in the "Panhandle" unit of the Crater Forest, east of Crater Lake National Park. Here the Pelican Bay Lumber Company has cut the market timber from about 13,000 acres.

A good virgin stand, together with a very fine job of marking, largely the work of Lumberman John Holst who has been in charge of the sale, has resulted in a splendid reserve stand of timber for the area as a whole. As is so often the case, however, reproduction is quite deficient and over some portions is almost entirely absent. The soil is a light to coarse pumice and there is normally a severe drought condition during the summer months. Water is very scarce on or near the area and probably for this reason the rodents which are present in considerable numbers do much damage through stripping the succulent inner bark of seedlings. This is in addition to the usual depredations through consumption of large portions of the pine seed whenever a crop is borne.

The local Forest officers conceived the idea of "cultivating" an area of about 10 acres where reproduction was particularly deficient, prior to fall of the heavy 1928 seed crop, at the same time poisoning the rodents over this area and the adjacent territory within a radius of about a mile. Accordingly, a small crew shaping up railroad grade motor ways on the cut-over area, turned farmer for several hours and with a small cat. and a disc harrow covered the open ground in the 10-acre patch. The Rodent Control office of the Biological Survey came to the rescue and furnished the poisoned grain, the supervision, and most of the labor for the considerable job of poisoning. The timber sale officers helped out as they were able, and the whole job was put over in a short time in early September. The necessary examinations involving strip and plot counts on the treated and adjacent untreated areas will be handled by the local timber sale officers. Much or little may be derived from this experiment, but it offers mighty interesting possibilities and the Crater officers and the rodent control men from Mr. Gabrielson's office are to be highly complimented for their keen interest in putting the job across.

IN DEFENSE OF PAPER WORK

By H. V. Beeks, San Bernardino

There is this side to the paper work problem, too, which the weary ranger and clerk should bear in mind when the inclination arises to cut out paper work. And that is, from the very nature of increasing industrial development, scientific research, educational activities and so on, the work of the world is gradually using more and more records.

Recently I asked two principals of schools if they taught any subjects. They replied that they did not. When I went to school my principals taught me, or endeavored to, so I inquired what it was that prevented present day principals of the junior high and high schools from teaching. They told me that the State was demanding more and more records, statistics and study-plans so that all their time was taken up with such work and other administration, and no attempt made to teach.

Some of us might be surprised on learning of the various forms and records that all sorts of workers have to maintain, when perhaps we have been thinking there was no such thing. We can well realize then that there is this side of it when a new report form comes out, - it is probably one of the essentials of progress. If we have to do it, so does the dairyman, the telephone lineman, the factory foreman, and the school teacher. If with all this we can weed out the useless and duplicate records, if there be any, and clean up vital jobs, we will be spelling progress with capitals. - D. 5 Bulletin.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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> James Wilson, Secretary of Agriculture
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> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 20 WASHINGTON, D. C. MAY 20, 1929

AMONG THE PIONEERS

Back in the early days of forestry when baked apples were becoming a weekly habit at 1617 Rhode Island Avenue, a young college student in New York state was seeking summer employment out in the Forests to satisfy an ambition created by an article in the Saturday Evening Post. At that time he was known as "Happy". Since that time his associates have come to recognize him by different names, all of them carrying to a greater or less extent a note of respect, because he is now District Forester of the Rocky Mountain District and recently turned a pioneer of the twenty-five year class - Allen S. Peck "Colonel". However, the same genial personality and human characteristics, even though in the "Boss", continue to brighten up the journey and create a wholesome atmosphere in official circles within his bailiwick.

His vacations in 1902, '03 and '04 were spent in forestry work in the East, chiefly on valuation surveys. After graduation at Union College there came a course in forestry at the University of Michigan, followed by a permanent appointment in the Bureau of Forestry.

Before finally becoming a member of the Government forestry organization of that day the future District Forester as a student assistant made a trip West where he sized up the opportunities for future work in the Rocky Mountain District, especially in connection with the planting projects on the Nebraska and Pike National Forests. From 1905 to 1917 he worked continuously for the Forest Service, a part of the time on cooperative extension work, during which period it was his privilege to give expert advice to no less a personage than Elihu Root at Clinton, New York. In 1908 he married and moved to District 3 where he soon became Assistant Chief of Operation and somewhat later Assistant District Forester in charge of Operation and Engineering. After handling administrative studies in the district, he was called in 1913 to Operation in Washington, where he undertook further special studies and handled allotments for the Service. In 1917 he left for France as a Major. In the fall of 1918 he was made Lieutenant Colonel, returning to the Forest Service in 1920 with a fine record of service and accomplishment in the forestry regiment. Among other distinctions he received the rank of Chevalier in the Legion of Honor.

On February 22 he reported in Denver as District Forester of the Rocky Mountain District, where he has remained since, completing with the beginning of this year a total of twenty-five years in actual service in the cause of forestry and conservation as it is conceived by the Forest Service.

Twenty-five years in the Forest Service need not be the occasion for the recital of a long list of virtues or accomplishments, which are already widely known and appreciated, but rather a time for congratulations and wishes that the next twenty-five years will be filled to the same extent with success and prosperity. - District 2

COST ACCOUNTING AS AN OPPORTUNITY FOR TRAINING

By Roy Headley, Washington

As the new system of cost accounting is tested, developed and installed in general use, it will be well to keep one view of the matter in mind, i.e., we all have a lot to learn about financial things and the new and sounder system will give us a fresh chance to train ourselves in financial management.

I have no superiority complex on the subject. I need training in financial management as much as the average Forest officer. I am keenly aware of my lack of understanding of financial facts and principles and know full well that the requirements of my job call for a grasp of the subject which I simply haven't got.

To say that we all need training does not mean that we admit we are economic illiterates as is sometimes charged. A sane and reasonable view is that the typical Forest officer has a considerable understanding of the economic principles involved in our kind of public service; that he knows something of accounting theory and practice; but that he needs a lot more knowledge and skill in this field.

But what has all this to do with a new cost accounting system and all the work which it will entail? How is such a system going to make economists and trained financial managers of us? We have a somewhat detailed expenditure record now and the evidence is conclusive that it has had only a rather spotted use in general policy making, training, and financial management. Why build a better but more expensive tool when we have shown so little inclination to use the one we have? When, for example, so many men say that they can not use the present expenditure records because the expenditures by activities include overhead how can they get any training out of any system? If they do not recognize that direct costs have been regularly set up separately in order that a student could work with either direct or total expenditures - well what's the use?

Maybe there isn't any. Water can be placed before us but who can make us drink? The decision to go ahead with the development of the new system was made in the face of much doubt and uncertainty. The vote as to what the Service should do was so close that it could not be said that "the situation gives the order" - at any rate the order was not clear. The average answer to the question as to how the new system could be used and made to contribute to better financial management was discouragingly vague.

The decision to go ahead was really a gamble. It was a gamble that the growing body of men in the Service who want to think and think straight about finances and policies in which finances are involved will find in a sounder system the material for thinking which they must have if they are to go on to the higher levels of workmanship to which they aspire.

It was a gamble on the truth of the proposition that the time is near at hand when few, if any, men will say "we are not in business for profit and we do not therefore need to know true costs." One reading the discussions in the accounting course of 1928 would be inclined to say that the general opinion of the Service already demands strongly that we determine true costs. One reading the answers to my letter of August 3, 1928, gets a different slant - he is not so sure.

The decision to go ahead with a new system was a gamble that the increased accuracy would be regarded as affording an important new chance for self training in public service by a majority of Forest officers and that in time the practice of the whole Service would reflect the stimulus to better financial thinking which the new system offers.

THE EVENT OF THE HOUR IN CONSERVATION

United Attack on Soil Erosion Problem Planned

The loss from rainwash and gullying in the United States is estimated at $200,000,000 annually. Definite plans have now been announced for heading up the work of three bureaus of the U. S. Department of Agriculture in a concerted attack on this national soil-erosion problem, which will be made in cooperation with State experiment stations. The Forest Service, the Bureau of Public Roads, and the Bureau of Chemistry and Soils are represented on a special soil-erosion committee, headed by Dr. A. G. McCall, chief of soil investigations in the Bureau of Chemistry and Soils.

In the program announced by the committee, the Forest Service will take a part. The Forest Service already has done considerable work on erosion problems, and continued studies are called for on the effects of forest cover, chaparral-brush, and range cover on run-off, erosion, and stream-flow regulation, and of remedial measures through forest management, fire control, and range management. The Forest Service will also concentrate its efforts in an area of serious soil erosion in the lower Mississippi Valley which lies east of the Mississippi and south of the Ohio Rivers. This area is one of the heaviest contributors to the silt problem of the lower Mississippi. Other work planned by the Forest Service includes the completion of a report covering 14 years of intensive work in central Utah on the relation of proper range-management to run-off and erosion control; methods of preventing the filling up of irrigation reservoirs in Idaho and Arizona, and expansion of erosion investigations now under way in California. Work will be done at the Lake States Forest Experiment Station (in cooperation with the University of Wisconsin), the Southern Station, the Intermountain, and Southwestern Stations, and the California Station (in cooperation with the University of California).

The Committee's program also calls for the establishment of seven regional soil erosion experiment stations by the Department. A preliminary reconnaissance indicates that there are 18 regional areas where the problem of soil erosion is sufficiently acute to require erosion stations as centers from which to combat the menace of soil loss. Additional stations will be located in other regions as funds permit, until the full 18 outposts are established.

Congress recently appropriated $160,000 for experiments looking to the checking of soil erosion losses.

MAJOR AHERN ANSWERS THE LUMBERMEN

In answer to the "panning" received from various members of the lumber industry for the statements in his bulletin "Deforested America", Major Geo. P. Ahern has addressed a letter to the WEST COAST LUMBERMAN magazine. The lumbermen claim the Major is "practically unknown" - "badly uninformed" - "a treeless critic" and "knowingly tried to deceive the people". His answer follows:

"I am appreciative of the generous space given in a recent issue to my article, 'Deforested America'.

"You are right in saying that 'There is intelligent private, as well as public fire prevention effort', and also, 'That the lumbermen on the Pacific Coast are doing everything humanly possible to prevent fires'. You also intimate that the lumber interests are spending vast sums for improving logging practice, slash disposal, for forest fire prevention of cut over lands and for reforestation. The above is true about protecting standing commercial timber only. The forest experts on the ground state that the bulk of the forest fire funds are so used. A glance over the official records will convince anyone that scant attention is given cut-over lands. The reports also indicate that very little improvement is noted in logging practice and that practically nothing is being done in the way of raising future crops of saw timber. Much is broadcast on this subject, but it is largely bunk, and the operators know it is bunk.

"No forester desires to prevent the cutting of virgin timber. He wants it to be so cut as to perpetuate the forest and not leave the land in devastated condition. I, for one, am sorry to see wood produced at a loss and would gladly vote for restricted production and 'fair profit for lumbermen.'

"I spent some years in the Northwest Rockies and am also familiar with your own Cascades. I have spent many years in the field in forest work since 1888 and am not a mere theorist.

"As almost all of my facts are taken from official records and from experts recognized as familiar with the situation, your merely stating that they 'sound funny' is no answer to an article that is approved by the head forester of the United States and by foresters generally.

"Be fair. Answer with facts. Tell me what your lumbermen are doing to insure an adequate future timber crop. What are they doing to control fires on cut-over lands, to better logging practice, to reforest cut-over lands?" - District 5 Bulletin

RESEARCH CONFERENCE AT LABORATORY

By H. S. Betts, Washington

The annual research conference took place at Madison beginning April 15. It lasted about 10 days and was the largest so far held, both in attendance and scope. The Districts were represented by Pooler, Tinker, Woodbury, and Neff; the Forest Products offices by Hill, Bradner, and Gibbons, the Experiment Stations by Forbes, McCarthy, Zon, Boyce,Forsling, Hill and Wakeley; the Washington office by Clapp, Marsh, Munns, and Betts; and the Bureau of Plant Industry by Hartley and Lindgren.

The technical staff of the Laboratory, numbering about 70 people, under the leadership of Winslow and his section chiefs, Thelen, Newlin, Hawley, Hunt, Heritage, Sweet, and Koehler, bore the brunt of the conference. About five days were occupied in the presentation of various Laboratory projects by the men in direct charge of them. The projects under way in the Forest Products offices were also presented in detail and more general statements made as to the work of the Experiment Stations, the work in Forest Economics Forest Pathology, and the various lines of work in the District offices closely allied with forest research. The subjects discussed ranged from unwrapping the spirals that hold together the bundles of fibrils in the cell walls to testing columns 12" x 12" in cross section and 24 feet long in the million-pound testing machine, from investigating the digestive apparatus of wood destroying insects to the amount of creosote imported, and from methods of putting out fires by sprinkling chemicals on them from airplanes to how much taxes a forest owner can pay and still carry on. The conference brought out more strongly, if possible, than ever before the interdependence of practically all forest research and the fine spirit of cooperation between the Laboratory and the various Experiment Stations and also the close bearing of research findings on public and private forest management. Towards the end of the conference committees were appointed on logging and milling projects growth relations, and the fire research situation. These committees were made up of District, Experiment Station, and Laboratory representatives and reported back to the general conference. Marked progress was made in satisfactorily lining up future work on these projects.

In the report of the logging and milling committee emphasis was placed on the forestry objectives and background of the study. The discussion at the conference indicated the possibility that our logging and milling data might be distorted when applied to certain kinds of selective cutting so as to bring about "high grading" of forests. Since the objective of all forest research is forest land use it becomes necessary to guard against the improper application of logging and milling studies. This situation is pointed out and provided for in the committee report.

The committee on growth relations recommended that the Laboratory take up this year the study of structure in relation to properties rather than such work as physiology or light relationships. This recommendation was approved by the conference.

The discussion of the fire research situation at the conference was quite thorough. A standing committee is to be appointed to survey the fire programs of the various units of the Branch. A series of tests is to be made to show the possibilities of various chemicals that have promise in fire suppression, including the proper apparatus for applying the chemicals.

THE SNOW CREEK PLANTING AREA

By Robert D. Maclay, Olympic

The late "Snow Creek Desert" on the Olympic Forest, containing some 3,500 acres of logged burned-over ground was examined by Messrs. Kummel and W. D. Bryan in 1926, and 1,442 acres were recommended for planting. In the spring of 1927, 450 acres were planted to 1-1 Roy stock Douglas fir. In the spring of 1928 an additional 839 acres were planted.

The survival of the 1927 planting through the first summer was 89.4 per cent. The second year examination showed that the survival was 87 per cent and that the trees had made splendid terminal growth. The first season examination on the 839 acres planted in the spring of 1928 showed a survival of 93.4 per cent, 4 per cent better than the good record shown in the preceding year.

During the Snow Creek planting three experimental plots were established to test stock grown one year in the seed bed and one year in the transplant (1-1 stock) against 2-year-old seedlings (2-0 stock). The two kinds of stock looked very similar at the time of planting, the 2-0 stock having a little better tops if anything, but the experiment showed a marked difference in survival. Only 37 plants out of 600 in the 1-1 stock died the first season, while 132 plants out of 600 died in the 2-0 stock.

Alder was planted in double rows along railroad grades for fire breaks. The first season's examination showed a survival of 80 per cent and the trees were "sure" growing. Several were measured that had made 14-inch growth the first season.

Costs! You may say why spoil everything by talking about that. They always bob up. Here are some of the "figgers".

The total cost, including salaries of Forest officers and cost of nursery stock, to plant the 450 acres in 1927 was $12.94 per acre. The 839 acres planted in 1928 cost $11.38 per acre. You see we improve with age.

AIRWAY BEACON ON CEDRO PEAK

The Department of Commerce was recently issued a Special Use permit to construct a 40 feet steel tower on which is to be placed a beacon light. Incidentally, we are to be given the privilege of using this tower for our lookout. A power plant is to be installed to supply the beacon with juice. (Manzano Ranger) - D. 3

YE EDITOR DISCOVERS

The conservation program which was prepared by the Minnesota Reforestation Commission failed of enactment during the session of the Minnesota State Legislature just ended. Although the bill was adopted overwhelmingly by the lower house its passage was blocked in the Senate. Two years will elapse before the legislature meets again. Speaking editorially the St. Paul Despatch said:

"It is possible that out of the Senate's wreckage of reforestation may come some advantageous consequences."

"No fight for protection of privately coveted public possessions has ever been easily won. The fiasco in the Senate is only one battle in a campaign which must be prosecuted with renewed vigor. This engagement at least has produced the Reforestation Commission's plan, whose fundamental soundness will become steadily more convincing as the subject is publicly discussed."

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Minutes of the meeting of the Regional Protection Board for California have just come in, accompanied by a report of an unusual and important board of review job done last fall. At this board of review session representatives of the Park Service, the State Forest Service, and the Federal Forest Service united in a review of a very troublesome fire, in which all three agencies were interested but in which the Park Service and State Forest Service were chiefly concerned. This board of review was conducted in accordance with the principles of good post-mortem analysis regularly employed by District 5 in its own board of review work. The conclusions were searching as well as constructive, and the outcome is very promising from the standpoint of closer relationships and more effective protection by the three agencies concerned. Such inter-department or inter-bureau boards of review have considerable possibilities for the development of effective team work in the future.

At the recent regular meeting of the California Regional Protection Board, adequate protection of the public domain came in for a good deal of discussion and the board went on record with a well supported resolution in favor of an expenditure of $40,000 for prevention and presuppression of fire on the unreserved public domain in the State.

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The 9th annual meeting of the National Conference on State Parks was held at Clifty Falls State Park, Indiana, on May 7, 8, and 9. Assistant Forester Kneipp attended the conference and addressed the gathering on "Principles Guiding the Forest Service in National Forest Recreational Activities."

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The immediate extension of forest research under the McNary-McSweeney bill received the strong endorsement of the U. S. Chamber of Commerce at its 17th annual meeting in Washington. On May 3 the Chamber of Commerce adopted the following resolution:

"Recognition of the national interest in the forest resources of the country appears in the program approved last year by Congress for investigation, research and experimentation with respect to forestry problems. There are many important and urgent forestry problems, toward the solution of which the activities of the Federal Government contemplated under the program which has been adopted would greatly contribute. This program should accordingly be placed in effect at once, through substantial appropriations."

Several other proposals from various local Chambers of Commerce relating to forestry and conservation were referred to the Board of Directors for study. One of these, from the Madera County (Calif.) Chamber of Commerce proposed a declaration that Congress should require a large portion of the proceeds from sales of timber on National Forests to be used for reforestation of cut-over and burned areas in the watersheds from which the timber is sold. This, of course, fails to recognize that in National Forest timber sales cutting is regulated in such a way as to provide for natural reforestation of the stand.

According to the annual census of forest products taken by the Department of Commerce in cooperation with the Department of Agriculture, the lumber cut of 798 identical mills each sawing 5,000,000 feet or more increased 1.4 per cent in 1928 as compared with 1927. The 1928 cut amounted to 19,844,197,000 feet. Two leading producing regions showed opposite trends. The North Pacific States showed a gain of 4.2 per cent while the Southern States showed a decrease of 2.4 per cent.

FURTHER STUDY TO BE MADE OF YELLOWSTONE NATIONAL PARK BOUNDARIES

In 1925 the Coordinating Committee on National Parks and Forests, of which Colonel Greeley was a member, made a detailed study of and recommended certain proposed changes in the boundaries of the Yellowstone National Park. During the last Congress bills to accomplish these changes were introduced but were only partly enacted; certain changes being made on the north and east boundaries of the Park and the Teton Range being established as a separate National Park Unit. Due to objections by local hunting interests the proposed addition to the Park of the upper headwaters of the Yellowstone and the Thorofare country was deferred and the proposed elimination from the Park of the so-called Bechler Basin area so as to permit of its use for reservoir purposes actively was agitated.

To provide for further consideration of these and other changes, the last Congress authorized the President to appoint a special Yellowstone National Park Boundary Commission, which has now been done. The members of this commission are: Dr. E. E. Brownell of San Francisco, Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies; Mr. Arthur Morgan, an engineer and also President of Antioch College; Mr. C. H. Ramsdell, a landscape architect; and Mr. Arthur Ringland, heretofore Secretary of the National Conference on Outdoor Recreation. This commission will study the situation in the field between July 15 and August 15. Since Major Stuart will be unable to accompany the commission he has designated Assistant Forester Kneipp and District Forester Rutledge to represent him. - L. F. K.

GIANT TORTOISES GETTING ON WELL IN ARIZONA

The Daily Bulletin of June 15, 1928, told of the shipment of giant tortoises from the Galapagos Islands, Panama Canal Zone, to the Thompson Arboretum at Superior for experimental purposes. The Arizona Producer reports as follows concerning them: "Galapagos tortoises will probably never be found ranging wild over the deserts of Arizona. This is the opinion of Dr. F. J. Crider, director of the Boyce Arboretum at Superior where 15 giant "turtles" from the Galapagos Islands are getting along fairly well on the fruits of a certain variety of cholla cactus. Originally there were 19 tortoises, captured by a scientific expedition last year and brought to Arizona for experimental purposes. One died from an unknown cause and three were laid low by pneumonia in the course of the winter. They got out of the cave that is their home and the air of the desert nights proved too chilly for their tropical lungs. The tortoises weighed from 600 to 1,000 pounds each when delivered at Superior and they have gained steadily on an exclusive diet of cactus fruit. They are fed the fruits of the old man cholla, which grows so plentifully over the mesas and foothills around Superior. These fruits grow in long clusters like enormous grapes and are green in color even when fully matured. Dr. Crider says that the tortoises could forage for themselves if they did not have to compete with cattle, as the clusters drop off when fully ripe; but in dry years like this the range animals do a lot of browsing on cactus..." -District 3

PENNSYLVANIA STATE FOREST SCHOOLS CONSOLIDATE

Announcement has been made by Charles E. Dorworth, secretary of the Pennsylvania Department of Forests and Waters, of the consolidation of the State forest school at Mont Alto with the Department of Forestry of the Pennsylvania State College. The union will be effective June 15 of this year, when students of the two schools will join for summer camp work.

The school at Mont Alto was established in 1903, and the forestry department of the State college in 1906. Both have been maintained by the State. Secretary Dorworth points out that a single State agency in forestry educational work will be operated much more economically and will offer greater opportunities to both instructors and students. In directing degree courses in forestry the State college is to have the advice of members of the State forestry organization and will have the opportunity to make such use of the Mont Alto plant as may seem most helpful.

The new plans include special forest ranger courses and an enlargement of special forest research studies.

HOW THE TUNISIAN INCENDIARY PREPARES HIS ALIBI

L. Lavauden of the French Forest Service reports the following method used by Tunisian incendiaries to set up an alibi The bark is removed from part of a young cork oak in one piece to make a hollow cylinder. This cylinder is filled with a composition of which cow-dung is the chief ingredient. A hole is cut in one side and the cylinder is laid in a suitable place in the forest, with a stone at each side to hold it in position. Against each end are piled twigs, dry leaves, and other combustible materials. Fire is started in the small hole on the side of the cylinder. While it smolders slowly toward the combustible material at the ends the Tunisian goes to the nearest town, gets drunk, picks a quarrel, and gets himself arrested. His alibi is perfect. The forest guards rush to put out the fire and the lookouts scrutinize the landscape in hopes of getting a glimpse of the incendiary. No one thinks of the poor devil who at that moment is before the justice saying in a humble voice that he regrets his drunken conduct and promising "not to do so any more." So he is released with a reprimand tempered with benevolence, instead of being sent to the penitentiary or the gallows. - From Revue des Eaux et Forets. Oct.

"SOMEONE PLANTED ONCE A TREE"

By J. W. West, Mount Baker

About 35 years ago an old settler, William Moran, planted a black walnut tree on his farm (within the Mount Baker Forest), which he abandoned about 20 years ago, because of the overflow from the Sauk River depositing from one to five feet of sand over most of it. I chanced to go through the place last September, and found this tree to be heavily laden with nuts. On inspection, I found that these nuts were fully matured. Later I took a hundred-pound potato sack and filled it, taking about half of the crop. I hulled them and had a little over a half bushel of nuts and also made seven gallons of fine stain, which I will use on my switchboard and on other things that need staining. This tree was approximately 60 feet high and one foot in diameter.

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MY TWENTY-FIVE YEARS IN THE FOREST SERVICE

By Joseph C. Elliott, D. 5.

In January of 1903 I was appointed to the position of Scaler under the Department of the Interior, on the Cass Lake, Leech Lake, and Winnibigashish Indian Reservations in Minnesota. At the time, the United States Government had sold the merchantable timber on all of the Indian lands in this State to aid in defraying the expenses of caring for the Chippewa Indians who lived on these Reservations. Some fifty men were employed by the Department of the Interior in looking after the cutting, scaling, and removal of the several billion feet of Norway and White Pine to be taken from the region. These men were woodsmen, not foresters, trained by apprenticeship in the school of the woods, and entirely innocent of college degrees.

Captain William O'Neal, Superintendent of Logging for the Department, typified all that was admirable in these pioneer American woodsmen. He was an able judge of men, skilled in his work, and thoroughly honest in the administration of Indian property. It was a privilege to be appointed Assistant Superintendent of Logging under him in 1904 and to have an opportunity to work with him.

In spite of ceaseless vigil on the part of the Government officials, timber-stealing was not an unheard-of infraction of the decalogue in the Minnesota of that day. Timber thieves would cut logs; haul them out on the frozen streams which flowed northward to empty into Canadian lakes; sink the logs under the ice; and cover the stumps with brush and snow in such a manner that it was difficult to detect the theft. In most instances where such stealing was discovered, the Department recovered pay for the logs from the purchasers but ordinarily failed to convict the original culprits.

One winter a popular resident of Cass County stole eight hundred cords of Jack Pine, one half mile from the town of Cass Lake, our headquarters. We did not become aware of this loss until the following spring, although several people in the town knew of it. In spite of the theft being such common knowledge in the community that we were frequently twitted about the minus quantity of our sleuthing ability, we utterly failed to get proof of the crime sufficient for conviction.

A part of the Chippewa Indian Reservation was later converted into a National Forest and forest protective measures were instituted, one of which was to employ Indians as fire guards. During the summer of 1906, my assistant and I were running land lines, and coming to the river at noon, we built a fire to make coffee. In a short time a diplomatic

Indian with the distinguished name of Jim Smith came along and began energetically to stamp out our fire. I inquired the reason. "Me Smoke Police, me Smoke Police," he replied, continuing to kick methodically at the fire. My assistant pushed him away telling him he would chop off his foot if he kicked the fire again. Jim ceased operations on the tiny blaze with a satisfied grunt, having achieved his purpose. One suspects that Jim by eternal vigilance earned his money as fire-patrol.

During the summer of 1908, Eugene Bruce, a Lumberman in the Forest Service, induced me to take the Civil Service examination. In September I was appointed Lumberman in the Forest Service and was detailed to Washington, D. C., for four weeks; then sent to Boise, Idaho, where I worked for two months on the Payette National Forest examining and appraising timber for a sale to the Payette Lumber Company. About November 1, I was sent to Sisson, in District 5, where I worked for about three weeks. I was then detailed to District 3, headquarters at Albuquerque, New Mexico, where I remained until the following year.

At Albuquerque a veritable hornet's nest had been stirred up. The War Department in cutting timber on Fort Wingate Military Reservation had done so in a most wasteful and inefficient manner. A certain official of the Forest Service, stationed nearby, observed the slashing and made a report to the Forester, illustrated by photographs showing the devastation. The Forester took the matter up with the President, whereupon the Big Stick summarily descended upon the Fort Wingate officers.

I arrived at Albuquerque ignorant of the situation and was immediately detailed to Fort Wingate without having been informed of this controversy. My charge was to attempt to induce the Fort officials to cooperate with the Forest Service henceforth in their logging.

How unwelcome a guest any Forest Service man would prove at Wingate was left for me to discover only when, like the Light Brigade, there were "guns to the right of us, guns to the left of us," angry voices thundering, and no retreat visible. The Major sent for the folder with all the correspondence between the President and the War Department and made his position clear. He explained that they were not loggers and did not care to be; that the Forest Service had never suggested better methods, in fact, had never mentioned logging to them at all, but in a most unfriendly manner had taken the matter directly to the President. When the Major finished his exposition, I told him that since we could get no further, I should like to be excused to send a telegram. While writing the message, the Major's orderly informed me that the Major wished to speak to me before sending the wire. Upon returning to his office he asked me what the Forest Service proposed to do if he decided to cooperate in the logging of the timber in question. Not having any instructions, yet feeling the necessity of meeting him half way in this softening mood, I told him that our Department would assist them in marking timber for cutting; in giving instructions as to the utilization of timber; and in the disposal of brush and debris; also, that I was sure I could guarantee that there would be no more reports of the red-flag variety going to the man with the Big Stick.

After being an honored guest in the Commandant's house during my stay at the Fort, I left a Wingate in which there was a new understanding of, and friendliness for, the young Forest Service.

Once more back in California, I was detailed to the Standard Lumber Company's sale on the Stanislaus Forest - another volcanic area. The sale had been closed down for a year. "because of inefficiency on the part of the Forest officers," said the company; and, "because of lack of good faith on the company's part," retorted the Forest officers. Through political influence at Washington, the sale, after being closed by the District Forester, was reopened and I was sent to administer it.

After several hours of verbal preparation in the District office, plus several days of arming at Sonora, we, like Macbeth, got our courage "screwed to the sticking point," to beard the lion in his den. Instead of roarings we met a man disappointingly mild. We got the logging operations under way and only once had to close the sale down for the space of a day because of a lack of sufficient deposits to cover the value of the timber cut.

Except for the winter of 1917-18, when the United States was in the World War, my work in forestry has all been in District 5 for the past twenty years. That winter I spent in Arkansas, cruising timber and administering sales, a trip made necessary by the scarcity of men at home to "carry on" after the departure of the Forest Regiment.

During my years in District 5, many changes have come about. The California of the early part of the first quarter of the century was not the California of today. All traveling in the mountains was done in horse stages, then. The drivers of these stages were the artistic progenitors of Cook's Tour Guides and sight-seeing-bus spielers. They knew the history of the gold excitement which had once stirred every gulch they passed or how many horse-thieves had swung from each likely tree by the roadside. With a flickering whip the traveler's gaze was carefully directed to these points of interest. At every saloon the vehicle drew up to water the horses and "licker" the passengers!

Logging camps have changed their ways as well as modes of travel. Sanitation was a word still reposing in the dictionary so far as use about camps was concerned. At best it was a luxury having to do with the effete civilization of the towns.

In those days of the Forest Service's infancy, the personnel of the organization was young and inexperienced in business and in the administration of forests and timber sales. Any lack in experience was compensated for by an eager enthusiasm on the part of the young foresters fresh from the forest schools, who desired only a chance to rescue from the avaricious greed of the lumber manufacturers the fast disappearing forest lands of the nation. Many of the colleges of forestry fired by a great idealism were preaching at that time a doctrine that all lumbermen, like Lincoln's rat hole, would bear watching, and that many of their holdings were probably come by in most questionable ways. The grief to which the over-zealousness thus engendered frequently led "in those good old days" was then no matter for jesting. Time has taught us many things, amongst which not the least valuable is that the lumber manufacturers are a human lot, doing a necessary work in the world, and probably just as honest as any other set of men.

Today, the forest administrators, - growing pains well past - are as keen and astute a group of business men as are anywhere to be found. They rank second to none.

NATIONAL FOREST RESERVATION COMMISSION AUTHORIZES ADDITIONAL PURCHASES

By L. F. Kneipp, Washington

The new membership of the National Forest Reservation Commission met on May 15 to consider a program of land purchases under the Weeks Law and other matters relating to the Weeks Law and the Clarke-McNary Law purchase work.

The most noteworthy purchase was that of 93,000 acres in the recently established Osceola purchase area in extreme northern Florida at $5 per acre. This area offers opportunity for immediate initiation of Naval Stores operations, plus that of the immediate application of good silvicultural practice, and therefore bids fair to become one of the most profitable and productive of the National Forest purchase areas. The remainder of the offered lands was distributed among a number of the purchase units, the next most important program being that of the Superior in northern Minnesota, which involved a considerable number of small cases aggregating 10,642 acres.

Steps were taken to formulate a new and comprehensive plan of purchase as the basis for a proposal for a long term fiscal policy and program to succeed the present Woodruff-McNary Bill which extends only to the end of the fiscal year 1931. Authority also was granted to the Secretary of Agriculture to submit to the Bureau of the Budget an estimate for an appropriation of three million dollars for 1931, but the commission while indicating its complete willingness to work aggressively for increased appropriations in later years declined to approve recommendations for a supplemental appropriation of one million dollars for 1930. The new membership of the commission indicated a very keen and constructive interest in the purchase work, and there is every reason for the expectation that under their guidance new standards of accomplishment will be attained.

PUBLIC VS. PRIVATE PLANTING IN MICHIGAN

By Crosby A. Hoar, D-9

Michigan is the foremost State in respect to forest planting by the Federal and State governments. Aided by a donation of $9,700 from the Michigan Kiwanis clubs, the Huron National Forest planted 10,845 acres in the fall of 1928, of which about one-half was replanting to make good the losses caused by an exceptionally hot, dry summer in 1927. Ordinarily replanting has not been necessary. The capacity of the Beal Nursery has been steadily expanded and is still growing.

The State nursery at Higgins Lake is also being enlarged. Last summer it inventoried 28,000,000 trees, and the output during the year was 14,162,000 trees. This output permitted the planting of 13,175 acres of State Forests and the sale to private owners of enough stock to plant 1120 acres.

The Michigan Agricultural College maintains two nurseries, which last year sold stock sufficient for 854 acres to farmers and other land owners. These nurseries, also, are increasing their production.

Probably no other State has closely approached Michigan's record of 24,020 acres planted in one year on Federal and State lands. However, the 1974 acres planted by private owners are not impressive. Public planting is increasing rapidly and is a direct attack, however inadequate, upon the problem of idle land. Private planting, according to reports from the State Forester and the Agricultural College, increased only 6 per cent over that of the previous year. Moreover, it was chiefly on farms and hence made no appreciable impression upon the several million acres of cut-over pine plains which need to be planted.

There is no evidence that Michigan's forest tax law passed four years ago has encouraged private owners to plant. The supply of nursery stock for private planting easily exceeds the demand, while for Federal and State planting the supply of stock is the limiting factor just now. There is general approval of public planting, but relatively little interest on the part of potential private planters.

This condition may not be permanent, but it is rather striking that the State in which National and State forests are being planted more rapidly than in any other does not find them more effective object lessons to private planters.

WILDERNESS OR PRIMITIVE

By G. E. Mitchell, Chelan

Referring to Mr. Kneipp's article in the Service Bulletin of February 11, suggesting a more fitting name for our recreation areas than wilderness areas, I wish to put in a plug for the old name.

It is true the name "wilderness" as our fathers construed the word does not fit the country. By the same token, neither does the word "primitive." But the meaning and general use of our words change with conditions. As an example, take the word "pioneer." Nowadays we call a man a pioneer when he moves his family onto an outlying farm and has to use gas light, sends his children to school on a school bus, and drives a car of '24 model. Our grandfathers would have thought a man living under such conditions to be fortunate indeed.

Where, may I ask, can one find a wilderness in the United States if not on the National Forests? If these are not wilderness areas we might as well abandon the word so far as our country is concerned. On the other hand, is our forest primitive? We on the Chelan do not like to think of our forest as being in a primitive state. We feel that our trails and telephone lines are strictly modern, and that our detection and protection are according to the latest approved methods. According to Webster, a wilderness is an uncultivated, uninhabited or barren area, while primitive pertains to beginning or origin; first or earliest.

Another point to be considered in naming these areas is to choose a name with advertising value. We want a name with appeal; a name that in modern interpretation will convey the best picture and mean the most to the public.

GEMS FROM JUNIOR FOREST EXAMS.

The hickory would be one of the hardest woods to replace, if the supply were used up, which it almost is nearly at the present time. The hickories of Europe, I believe were wiped out during the ice sheet that covered that country about 100,000 years ago.

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A record was kept of the character both of the work done and the meals eaten.

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The method used in the recordation in the wage book has a definite purpose back of it that in it it was desired to keep in units by items the costs.

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Reforestation is practiced on only a small portion of Arkansas. It therefore needs nourishment. Such a record thows at least one blot on the State's future which the country at large must prevent by all hazzards.

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As the seed was counted in lots of one-tenth pound each, ten such lots made a pound when washed with red lead. One half pound, or 50 per cent of this amount, gave 4500 seeds the equivalent of 5 of the one-tenth lots. Therefore there are 9000 seeds per pound.

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The seedbed was raised to within one inch and left for further work.

The chestnut blight is a deadening disease as it kills the chestnut. *****The blight is gaining on the chestnut and following out this slowly moving devastator.

YE EDITOR DISCOVERS

Forest Week will be observed in the District of Columbia from May 23 to June 3. The city schools will be the center of the observance. Ten meetings have already been scheduled and it is expected that this number will be about doubled. Every pupil in the sixth, seventh, and eighth grade grammar schools will be reached. A regular program consisting of an introductory address, music, and a motion picture film has been arranged for each meeting.

The week will be opened by a large meeting held in the auditorium of the Central High School on Thursday, May 23, at 2 p. m. Superintendent of the Schools Ballou will preside at this meeting, Major Stuart will make the address, and the Marine Band will provide music. At the other meetings already scheduled H. A. Smith, W. R. Mattoon, and L. C. Everard will make the addresses.

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A recommendation that 1392 acres embracing that part of the Mount of the Holy Cross within which the cross itself occurs be established as a National Monument has been approved by the Smithsonian Institution and transmitted to the President by the Secretary of Agriculture. The reason for this action was the fear that some misguided individual, taking advantage of such mineralization as occurs in the mountain, might at some future time locate a mining claim to embrace a part of the cross and disfigure it by mining dumps, structures, etc.

The area of 350 acres from which the best view of the cross can be obtained was classified by the Acting Secretary of Agriculture in 1922 as being chiefly valuable for devotional and recreational purposes; so that with the inclusion of the cross itself in a National Monument this unique natural phenomenon permanently will be protected for the use and enjoyment of the increasing numbers of people who, regardless of sectarian affiliations, visit the area each year to study and enjoy this interesting example of nature's handiwork.

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In the hope of educating editors, press associations, and news writers to report forest fires as they really are, District 5 in cooperation with the California State Division of Forestry and the National Park Service has prepared a standard fire classification for California. In this various types of fires are classified with suggestions for appropriate terminology in describing them in newspaper accounts. It is pointed out that all fires are not forest fires, nor do they all "rage" or "sweep" over land with the same devastating effect. The classification table was made in the hope of preventing exaggerated reports of fires, but it is pointed out that no "gag rule" is intended to withhold accurate news of fires, and Forest officers stand ready to supply all agencies at all times with authentic data. Copies of the fire classification have been furnished the California press.

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Honorable mention for their outstanding work in championing the conservation and eevelopment of forest resources was accorded the St. Paul Pioneer Press and the St. Paul Despatch in the Pulitzer awards recently announced. These awards were in the journalistic class and were given for what were judged to be the most meritorious public services by newspapers in the United States. The following telegram of congratulation was sent by the Forester to the editors of the two St. Paul newspapers:

"On behalf of Forest Service accept my heartiest congratulations for Pulitzer honorable mention for your work in forest conservation. The principles you have fought for are of utmost importance to Minnesota and I am confident they will prevail."

ATTENTION MONKSHOOD FANS!

By W. A. Dayton, Washington

Dr. Wm. J. Bonisteel, Professor of Materia Medica in the College of Pharmacy, Fordham University, New York City, has written the Forester, under date of May 1, as follows:

> "I am engaged in a study of the aconites of the United States and from other parts of the world, in conjunction with Dr. A. B. Stout, Scientific Director of the New York Botanical Garden. This study will include the poisonous properties both from the human and animal side. X X it takes considerable material to make an investigation both from the botanical and chemical side. I am wondering if it is not possible to have your field men send me either seeds or better the actual plant specimens so that I may grow them and thus be sure of the types that I am working with. I trust that I am not asking too much of you and I am willing to expend some money if necessary in order to get plants."

Three species of monkshood (Aconitum) occur natively in the eastern States and two are confined to Alaska. There are about a dozen, possibly more, mookshood species occurring in the eleven far-western States. Some are tolerably good sheepweeds; theoretically they are cattle-poisoning plants but Dr. C. Dwight Marsh, the poisonous plant expert of the Bureau of Animal Industry, thinks that there is no authentic case of mookshood poisoning under western range conditions. An apparently authentic case of an eastern monkshood fatally poisoning several head of cows was mentioned by the writer, under the heading "Moses Bennett's Baneful Monkshood," in the Eastern District Digest for April 28, 1926.

Medicinal aconite is derived from the roots and leaves of the Old World Aconitum napellus; this drug, used as a heart respiratory sedative, is in considerable demand and the species is occasionally cultivated commercially in this country. Our native species possibly have similar properties. Perhaps some of our field men can assist Professor Bonisteel in his studies?

APACHE PINE

By Quincy Randles, D. 3

The Apache pine (Pinus apacheca), as it is sometimes called in the region, Arizona longleaf pine, is one of the interesting but little known pines of the Southwest. In

Arizona the tree is found only in the mountains of the Coronado National Forest, and in New Mexico one tree from the Carson National Forest in north-central New Mexico has been identified as this species. In southern Arizona the tree grows at the lower edge of the timber type mixed with Chihuahua pine (Pinus Leiophylla) and a variety of oaks and at the higher elevations with western yellow and Arizona pine (Pinus arizonica).

This Apache pine is a rather striking tree with its 8 to 15" needles, which are dark green in color. The tree gives the appearance of being very thrifty. It has rather open round-topped crowns. Aside from the above, it resembles the western yellow pine. Indications are that the tree is quite fire resistant. In the young trees the terminal bud is quite fire resistant due, no doubt, to the mass of needles surrounding it. The older trees judging from examinations made on burned areas, are also able to withstand surface fires better than the associated species. The reason for this has not been determined

This tree very much resembles the longleaf of the South. In fact, a number of the pines of the Southwest have counterparts among the southern pines. As, for instance, the the shortleaf of the South and Chihuahua of the Southwest, the loblolly and the western yellow pine, and the longleaf of the South and the Apache.

The Apache pine is a rather rapid grower, due no doubt to the rather good sites on which it is found, the long growing seasons in that region and the fact that the tree occurs singly and has plenty of light and growing space.

Little cutting has been done in the type, but old time carpenters in the region who have used the wood state that it works well and is considered by them as a very valuable wood for construction purposes.

The limited range occupied by the tree might indicate some weakness that would prevent its introduction to other localities. However, no experimental work has been done in attempting to extend its range.

HOW MUCH WATER IN A BONE?

By E. N. Munns, Washington

How dry is "bone-dry?" The dictionary says, "dry as a weathered bone." Upon consultation we find weathered to mean "exposed to the weather." A bone exposed to the weather of Nevada might conceivably be rather dry, dry enough to be called bone dry, but would a bone exposed to the moisture of the Mississippi delta, or to the moisture of southeast Alaska be as dry? I have been in Nevada, but not in either of the other places, so it is impossible to tell what bone-dry would mean there.

But I am mystified. I read in a recent Service publication on the pulp resources of Alaska that a cord of wood will yield 2100 pounds of pulp "bone dry." Not long after I read in a trade journal that one company planned to ship "bone-dry lumber" because they had a new kiln. And now a manuscript from another Bureau has just reached me for comment In it the author said that the wood weighed so many pounds per thousand feet "bone dry." And it was air seasoned wood.

I can understand that pulp might be so squeezed and dried that it would have less than the atmospheric moisture content when it left the last steam roller. I can understand that a kiln can dry lumber to less than the atmospheric moisture of the immediate moment. I can understand that wood will weigh less dry than wet, but I confess to inability to get what bone-dry really means. Do not such terms need definition that the layman can understand if there are foresters who do not? Is not such a term a mis-nomer?

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII NO. 22 WASHINGTON, D. C. JUNE 3, 1929.

THE COLVILLE FOREST POINTS THE WAY

By F. H. Brundage, D. 6

The protective agencies in Oregon and Washington have been particularly concerned on account of the annual increase in tax delinquencies in cut-over and logged-over lands and the acreage of such lands which are gradually being taken over by the counties on account of tax delinquencies. Such lands when acquired by the counties, cease to contribute to fire protection, and, therefore increase the per-acre cost on contributing lands. The Forest Service in some protective units is also affected by this problem.

Supervisor Thompson of the Colville Forest has negotiated an agreement with the County Commissioners of Ferry County, providing for the payment by the county at the regular tax roll rate for the 16,000 acres of county-owned lands. Ferry County is an area of very low assessed valuation, and the fact that a county of this character has recognized and assumed the obligation of carrying the protective cost of the lands acquired through tax delinquencies is certainly most encouraging. Both the Forest Supervisor and the county officials deserve a great deal of credit for providing adequate protection for this area of county-owned land. The county will in the long run benefit because the protection given will sufficiently increase the timber values on these lands to an extent which will warrant their return to private ownership, or, if retained permanently by the county, will in the long run yield the county forest revenue. As long as these lands contribute to protection, the annual cost for the balance of privately-owned lands in the county will be kept lower and there will be a tendency for the annual acreage of timber lands becoming delinquent to decrease rather than to increase.

While there have been several cases where counties have contributed a flat sum to protection on account of acreage of county-owned lands, this gives, I believe the first instance where a county has assumed the full per acre cost carried by adjacent private lands. There may be opportunities along this line in other units which are being overlooked.

NOW HERE'S D - 9!

By W. F. Ramsdell, D. 9

Who ever thought of Milwaukee as a National Forest District headquarters! That certainly isn't the first thing one is apt to associate with the name, and, to most of us, I think it would have been about the last. Personally, I am still in somewhat of a daze to think of actually making my residence there, and working on the forest problems of the Lake States region and all as part of a natural and normal Forest Service expansion program. It is difficult for many to think of that territory as one of the most important forest regions of the United States.

The newly created District 9 covers the broad territory of Michigan, Wisconsin, and Minnesota, which is greater by some 33,000 square miles than our own D-6 territory. It is even more surprising to learn that the present total forest land area of these Lake States is greater by about five million acres than that of Oregon and Washington. This begins to point the reason why the problems of the region are considered of sufficient National importance to warrant the Forest Service expansion contemplated through D-9. The forested area is estimated to be about 57 million acres, and while there are still nearly 10 million acres of virgin timber, over 20 million acres are not restocking or productive. This vast non-productive area presents a tremendous economic and financial problem to the counties and the States, and the while Forest Service effort is broadly aimed toward assistance in the solution of this idle land problem.

There are at present but 3 National Forests in the District, which have been administered in the past by D-2. These are the Superior and Chippewa in Minnesota, and the Huron in Michigan. In addition, 7 purchase areas have been approved by the National Forest Reservation Commission, 1 in Minnesota south of Duluth, 3 in northern Wisconsin, and 3 in the northern peninsula of Michigan. When this purchase program is completed there will be 10 Forests or administrative units with an average net area of about 375,000 acres. As the acquisition work progresses we must expect to admit the Marquette, the Flambeau, the Oneida, the Keeweenaw, etc., into the family of Forests, - certainly upholding at least the standard for pulse-stirring and intriguing names.

The present Forests are interesting through their extreme diversity. The Superior, lying along the Canadian border in northern Minnesota, is quite large--nearly a million acres net--created from public domain, and although in an old logging region the greater part of it is about as "primitive" as anything we have in the United States. It is a region of countless lakes and streams--a canoeist's paradise. Important sales of pulpwood are just opening up on this Forest but a considerable portion will be set aside as a "primitive area." The Chippewa Forest, in north central Minnesota, is the remnant of an old Indian reservation, which was almost entirely cut over before passing to the Forest Service in 1925. A fair reserve stand of timber was left at the time of cutting, however, and with the uncut acreage the forest now presents probably the most intensive timber management and utilization of any National Forest unit. The area is only about 200,000 acres but practically every acre is good merchantable timber growing land and the unit is expected to shortly bring in a sustained annual income of about $100,000, or 50 cents per acre. By far the greater portion of D-9, however, is typified by the Huron (old Michigan) Forest. Here, with a small area of poor public domain lands as a nucleus, the Forest is being built up through purchases of the adjacent cut-over and largely burned and denuded private lands. Planting must be resorted to and this work is now going ahead at a rate of 10,000 acres per year. Although the site is poor and we start from "scratch" yet the plantations have been very successful and the costs surprisingly low, totaling about $4 per acre.

The land is nearly level, will be easily logged, and markets are close with almost ideal transportation facilities.

The National Forest acreage will be greatly enlarged through purchase and creation of new forest units, but will be small in comparison with the western Districts. On the other hand nearly every acre acquired will be valuable timber producing land, and the opportunity for intensive "timber farming" will be unsurpassed, the region lying as it does close at hand to the center of population and the center of wood consumption. As I understand it, however, it is hoped that the greatest good to the cause of forestry will come through the encouragement of increased efforts by the States and private operators which can be brought about by an active Forest Service organization within the Lakes region.

Any one of us can readily understand that it is not an easy thing to leave District Six. Taking all factors into consideration, I think there is no doubt that the Northwest is the most attractive and thoroughly satisfying forest region of the country for the forester to work in. And greater than the lure of the "District" is the friendly, helpful spirit of comradeship throughout the D-6 personnel. I am more than sorry to be leaving and in doing so want to take this opportunity of saying goodby and the best of luck. When you take that trip East remember that the Milwaukee headquarters is only a step out of Chicago.

ENAMEL SIGNS

By Theo. Shoemaker, D. 1.

The mortality rate of signs is an important factor in determining their economy and usefulness. For that reason a study of the enamel signs has been carried on in this District to find out what the mortality on account of defacement and breakage has actually been on this class of signs, which the District has used extensively. The first of these signs were erected in 1921. The study was begun in 1923, terminated at the close of 1927, and covered all enamel signs placed from 1921 to 1927 inclusive.

During that period an approximate average of 3,100 signs were exposed to all forms of injury which mischievousness or vandalism might devise, and at the end of the period 661 had suffered damage varying from slight to a degree resulting in entire loss of usefulness. Defacement therefore averaged about 3 per cent annually on the number of signs in place. The 1927 report showed that 5,000 enamel signs had been posted and that about 2,000 more were on hand to be posted.

Assuming that 7,000 have now been posted and that number will be maintained, it will require about 210 new signs annually for replacement unless such damage can be reduced. Considerable concentration of sign defacement is shown, indicating that a reduction may be brought about by both educational means and by the selection of locations for this class of signs where experience shows there is less danger of injury.

It may be safely assumed that many of the signs will never be defaced. If this number is placed at 50 per cent, and their life when exposed only to natural elements is estimated at 30 years, the average annual mortality is increased through ordinary wear and tear by 117, or to a total of 327. This does not appear to indicate an excessive outlay for maintaining 7,000 signs in first class condition.

On the question of depreciation from natural causes, there seems to be no good basis for an estimate, either for the enamel or wood signs. The enamel signs that have been up eight years bear no evidence of deterioration, but it is too much to hope they will remain serviceable indefinitely, and an assumed life of 30 years seems as good as any. If it ultimately proves to be 20 years or 50 years, the difference in replacement costs will hardly be a large enough factor to affect the practicability of enamel signs from a cost standpoint.

If the study warrants any conclusions they are general and to the effect that enamel signs are practical in this District both from the standpoint of appearance and cost, and that if wood signs are to compete successfully they must be carefully designed, well finished, and made of lumber specially selected and treated for the purpose. A much cheaper home-made metal sign that seems quite satisfactory is now being tried out on a large scale in D-1. Perhaps it may prove to be the solution of much of our sign problem. Choice must rest largely on personal or group preference both as to dignity and attractiveness, and as to estimating the probable cost of the different types of signs.

The fact that the greatest damage has occurred in this District in localities of heaviest travel and camping use, suggests that the problem may vary greatly and that in other Districts where recreational use is heavy the mortality rate of enamel signs may be so heavy as to be prohibitive. Again, the opposite may be true.

Most of the damage has come from shooting and throwing stones. There has been some bending and twisting out of shape, and a few have been torn down and carried away or hidden. Thoughtlessness among boys is believed accountable for most of the sign defacement, although some of it is evidently the work of adults among both local residents and tourists, and a small part is doubtless malicious. Direct attack by educational means, particularly in the schools and among the Boy Scouts, has resulted in material reduction of damage in some of the places where it had been heaviest.

EARLY DEFORESTING IN AMERICA

By E. N. Munns, Washington

Early accounts of life in the Colonies, and later, are of interest from a forestry as well as an historical point of view. Thus, when the English first settled upon Cape Cod, there was an island off Chatham, about ten miles distant, known as Webb's Island. This island, reported on early charts as being about 20 acres in extent, was covered with a dense forest of red cedar in great demand for posts and fishing equipment, and the island was the source of this cedar wood supply for the inhabitants of Nantucket. Repeated heavy cuttings, and possibly fire as well, were responsible for the loss of the protective cover, the formation of dunes, and finally the loss of the island itself. Coast maps now show the former island as a shoal.

The Cape Cod itself was forested. Of course there is no way of telling how much of a forest here existed; it is doubtful if it was such-a-much. Anyway, there was a forest. But with the occupation of the Cape, history tells us, the forest was converted into houses and "flakes" on which the codfish were dried. The sand then began to blow and the inhabitants had trouble with dunes. They still have it, but although it is possible that the early trouble was not caused entirely by man's activity, it is more than likely that it was greatly accentuated by thoughtless or unknowing use or abuse of the woods.

Nantucket Island settlement dates back to about 1660. About 1750 a map indicated a place towards the east end of the island known as "The Woods", which is now desitute of trees". In 1800 the observation was made that "the island seems to be blowing and washing away since the woods were cut away. The island was formerly well wooded. There is now on the island not a single tree of natural growth." It is easy to picture the need of the local populace in the early days for an abundant fuel, particularly with a population of some 3,000 souls about 1750.

Another writer on agriculture in Massachusetts about 1800 observed that the needs of the cities for fuel had caused the country to become well-nigh barren, and a few pages later he remarks, "the effects of the east winds extend farther inland than formerly, and injure the tender fruits, particularly the peach and even the more hardy apple." Is there any relationship here? One wonders!

A traveler in Pennsylvania in the early 1800's stated that the country in the neighborhood of Philadelphia "had a barren look". There were no trees, all had been cut in clearing the ground for farms, or had been cut for fuel. This lack of trees close to home caused considerable suffering among the inhabitants of the small communities during the winter because fuel wood could be obtained only with difficulty.

A MAN-SIZE JOB

(Extract from Harry J. Tompkins' description of his job of measuring rainfall and streamflow in the mountains of Southern California.)

"The origin of all stream flow is precipitation--here, chiefly rain. Months of heaviest fall are usually December, January, and February. Months usually without rain are June, July, August, and September. The quantity is highly irregular, varying from six to 66 inches per year.

"Intensity of individual storms is shown by clock-controlled rain gages and stream gages to vary from zero to two inches per hour. The mountains rise from the plain, at about 1,000 feet elevation above sea level, to peaks of from 5,000 to 10,000 feet. These factors produce stream velocities from zero to twenty feet per second. My work is to travel from two to two hundred miles per day and measure the discharge at as many stations as I can reach. In flood time due to washouts it may be literally impossible to reach even one station. Flood measurements are extremely important because of the short interval of peak stage. In order to avoid loss of valuable data it is necessary to foresee possible emergencies. This means, clean, oil, and adjust all clocks, recorders, and motors. Be provided with spare parts for instruments and automobile. Keep posted on new roads, trails, bridges, and emergency transportation. Keep close watch of all weather signs. I have a rain gage and barometer at my residence. My equipment is kept in my garage. I am ready to go to any point at any hour, on any day. Food and blankets are in the car. If an overnight stay is desirable, I can face the next day in condition to do good work. When a flood tears out an instrument shelter, it must be rebuilt. This is usually made of concrete or rock, using three or four men about three weeks. Cable equipment (from which discharge measurements are made when height or velocity of the stream makes wading impossible) is installed by day labor. Sometimes a small bridge is built to take the place of the cable. These bridges are specially designed to meet each set of conditions. Some of my stations are reached only by trail. I use a knapsack for meter equipment and a pack mule for heavy material. In time of heavy rains, some trails become almost impassible due to rocks and slides falling from the cliffs. Struggling through the rain with a heavy knapsack over such a trail gives grim enjoyment that comes only from sharing the world's rough work. Then when you reach the gage shelter and with numb fingers lift the instrument cover and see the pencil record accurately the biggest flood in your experience --! A single rain drop might soften the paper and ruin the chart. You dry your fingers and make your notes on that precious chart. Back to the cable. Assemble meter, telephone, fifty pound torpedo weight, stay line. Struggle with the river one hour, two hours. Keep your notes dry if you can. Drift log! -- Jump that meter out of the water or lose it! Done! Pack up your wet equipment and hit the trail which is probably worse than before. Then to the next stream hoping to catch the peak. And then to another, until dark makes further work impossible. Perhaps three hours later you are drying out, making repairs and getting ready for tomorrow. Usually you must go to other streams."

YE EDITOR DISCOVERS

As a result of the discussions at the District Foresters meeting in November 1928, it was decided to make an analysis of the financial history of a selected National Forest to determine what light our own experience throws on the business of growing timber as such an enterprise would be viewed by a private business concern. In January District Forester Peck was requested to have such an analysis made on the Harney National Forest by Mr. Buckner, with the cooperation of Supervisor Conner and Mr. Thompson. The financial study has been completed and a report submitted to the Forester. This is believed to be the first comprehensive effort to utilize our own experience as managers of timber producing lands in attempting to determine the essential facts a business man would desire to know when considering the management of such lands on a sustained yield basis. The report provides a wealth of material for use in a study of the problem of how to get more forestry practiced.

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After more than fifty years in the service of the Government, Dr. E. W. Nelson, Principal Biologist of the Bureau of Biological Survey, has been retired from active service. As a young man of twenty-two Dr. Nelson began his work for the Government with a journey to Alaska under the auspices of the Smithsonian Institution. He entered the Biological Survey nearly forty years ago and has had a great part in building up that organization. From 1916 to 1927 he was Chief of the Biological Survey. He gained a world-wide reputation as a naturalist.

A letter of commendation on behalf of the Forest Service has been forwarded to Dr. Nelson by Major Stuart, congratulating him on his splendid service to the Government and the public.

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Recent examinations for positions in the Forest Service were taken by large groups of applicants. About 160 boys took the Junior Forester examination. Of this number 60 passed. It is expected that about 50 of these will be placed early in the summer from the register thus being established. Fifty-four people took the examination for positions in various grades of Forest Ecologist. A number of women qualified in this examination. Forty-nine took the examination for positions in the silviculturalist series. This is the largest number who have ever applied for research positions in these two latter examinations during the years since they were first held.

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Plans are under way for beginning this year a study of the inter-relationship of forests and wild life. This study has been made possible by an increase given to the Biological Survey under the provisions of the McSweeney Bill. The work will begin sometime during the current summer, a man being stationed at the Appalachian Forest Experiment Station by the Biological Survey. During the first year a general survey of the situation will be made, with particular reference to the mountain region.

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The Colorado Mountain Club in its publication "Trail and Timberline" is endeavoring to emphasize the scenic attractions in the National Forests of Colorado. Its May number contains two articles by Forest Officers - District Forester Peck and Supervisor Keithley of the Pike - and Several Forest Service photographs.

"DOUG.'S GONE LOCOED"

By E. N. Kavanagh, D. 6.

In the Rockies when the cowman refers to someone who has decided to trail with the "wild bunch" he expresses his opinion as I have regarded Douglas C. Ingram in the above heading. It is not quite that bad so far as Doug, ic concerned, but nearly so. Ingram is grazing examiner in D-6, and a recognized plant expert. The facts are that he is away on a six weeks' detail in southwest Texas, at the little town of Marfa (say Martha with a lisp) at the request of Dr. C. D. Marsh of the Bureau of Plant Industry. He is busily engaged in trying to find out all there is to know about the several varieties of loco that have been causing heavy stock losses in that part of Texas. He has three counties (5,667,840 acres) all to himself and from all accounts is having the time of his life. The country is extremely interesting to him; the stockmen are very cooperative, and the problem before him an intriguing one.

A large area of grama-grass range in southeastern New Mexico and southwestern Texas is being studied by botany experts under a special appropriation from Congress to determine if something cannot be done to eradicate the locoweed, check its spread, or devise some other means for overcoming the serious annual losses. The State of Texas is cooperating with additional funds and men, and the project is quite important and extensive.

All land in Texas is either State or privately-owned, and in the west Texas country all under fence. Ingram writes that the grazing land "was originally sold by the State mainly to 'homesteaders' in blocks of eight sections, usually at $1 per acre, on a basis of 1/40 down, the balance at 3 per cent, the loan extending over 40 years. These lands have gradually been acquired by the more permanent stockmen into blocks varying from 10 to 150 or even 250 sections. The lease value in this section varies between 30¢ to 50¢ per acre, with an average carrying capacity of 20 to 30 cattle per section (21 to 32 acres per head yearlong). Cost of pasture is figured as being worth $11.50 to $16.00 per head yearlong (96¢ to $1.33 per head per month).

Some of Ingram's territory is along the Mexican border and he has been offered a military escort on his trips along the Line.

NATURAL BEAUTY OF ROADSIDES TO BE PERMITTED BY GENERAL LAND OFFICE

By letter of April 12 the late Commissioner of the General Land Office, William Spry, announced the purpose of the Department of the Interior to make every effort to conserve the timber on public lands adjacent to or bordering on principal "trunk-line highways," and other main traveled roads. Appraisers examining tracts applied for under the Timber and Stone or Isolated Tract Acts are instructed to give particular attention to the scenic attractions as affects highways, and to promptly report areas which because of such scenic values should not pass into private ownership.

On April 26 Acting Commissioner Havell advised all Chiefs of Field Division of the desire of the General Land Office that investigations be made of the bona fides of any and all mineral locations the occupants, or locators, of which are using such locations for trade or business not related to mining operations, particularly where such locations are contiguous to highways, or which in any manner injure or distract from the natural scenic features of the roadside. - L. F. K.

GEMS FROM JUNIOR FORESTER EXAMS.

Although the land has been butchered, a timber crop can be grown if not too badly damaged.

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Most of the teamsters are comprised of Anglo-Saxons with a few French-Canadians sprinkled in here and there.

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The company estimates 9 years of work but this appears impossible.

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This area is generally worked over by the chemical crews since it is found there so it can be more economically done by the same party when managed in the same manner as for the rest of the area being protected in this area.

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Germination started to appear earliest in the least shallowest coverings.

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The land was laid outside the area.

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Sparks often set fires to the vicinity and forest.

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Sawdust may also be used in the mixture of coal screenings, of the waste liquor from the manufacture of sulphite pulp, of other products are being used as binder

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The chestnut blight was first reported in New York State which was then killing all the chestnuts in 1904 by Dr. Merkel in the Bronx Park radiating into New Hampshire, Massachusetts and West Virginia.

MISS AUGUSTA B. PALMER RETIRES

Approval has just been announced of the application of Miss Augusta B. Palmer for retirement on account of disability at the age of 68. Miss Palmer entered the Forest Service in November, 1907, as a clerk in the Branch of Operation. In 1912 she became custodian of the lantern slide collection and continued in that position until her retirement. which took effect March 21. When Miss Palmer began her work in the slide collection it was rather small and the circulation of the slides was very limited. She handled the collection efficiently during the period of growth from a small beginning to a business involving the handling of thousands of slides in constant circulation among educational institutions and other agencies interested in forest conservation.

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An S. O. S. has been sent out by District 8 for certain volumes of DECISIONS OF THE DEPARTMENT OF THE INTERIOR RELATING TO PUBLIC LANDS. The volume numbers follow: 20 21 23 24, 25, 27, 29, 30, 32, 36,and 46, If these are excess on the shelves of any District Office or Supervisor library, they should be mailed direct to Juneau, Alaska.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIII No. 23 Washington, D. C. June 10, 1929.

A PORTABLE POWER BORING MACHINE

By R. A. Bottcher, Columbia

Loggers and foresters have long recognized that standing snags present the greatest single obstacle to the quick control of forest fires.

The importance of snag falling in fire control was forcibly driven home to the personnel of the Columbia Forest during the disastrous fires of 1927. It is estimated that $45,000 was spent for snag falling during that season alone on this forest.

It was apparent to all concerned that the control of a fire in a snag-infested area depends upon the rapidity with which the snags can be felled. With this in mind, the Columbia personnel cast about for possibilities of speeding up the snag-falling operation. The use of powder was suggested. Experience had taught that powder, to be most efficiently used, must be placed in holes bored into the snags.

Obviously, hand boring was too slow to be of use on the fire line; consequently boring by power was considered and an electrical boring outfit consisting of a 1½ K.W. Delco plant, wire reel, and a ½" Black & Decker drill was assembled by T. P. Flynn and C. M. Allen of the District Office.

This outfit, using various types and sizes of drill bits, was tried out on the Mount Hood National Forest in March, 1928. Various tests with different strength powders were also made at this time, with the cooperation of the DuPont Powder Company. It was rather definitely proven at this time that this method of snag falling had possibilities.

In order to make the tests more conclusive and get some comparative cost data, the same general assembly of equipment, mounted on a truck, was used last summer on the Columbia Forest under actual field conditions, also several thousand snags in this vicinity were felled by the regular cross-cut saw method. The results of each method were tabulated and a comprehensive report prepared by the Pacific Northwest Experiment Station proving that this method was feasible from a practical and economic standpoint.

The use of the electrical equipment thus far has been limited on account of its weight. This equipment can be used only along roads where a light truck can be taken. Since the greatest need for this method of falling snags exists in places inaccessible to automobiles, the need for a light portable machine was apparent and two methods were considered for development, (1) a purely mechanical method, the drill being driven by means of a flexible shaft connected to a light gasoline motor (2) an electrical outfit, a generator, driven by a light motor, operating a drill head through a flexible wire conductor.

It is apparent now that either outfit can be developed into a portable unit and held within the limits of a 2 man pack outfit.

Work during the season of 1928 was confined to the development of the first method, i.e. the mechanical application of power by means of a flexible shaft. This machine was developed under the direction of the Superintendent of Construction on the Columbia Forest and consists of a Cushman Air-Cooled 2 cycle gasoline motor, developing about 1 h.p. coupled directly through a Stow 10' flexible shaft to a specially designed reduction drill head. The drill head was fitted to take any No. 2 standard taper shank drill or chuck. The speed of the motor is reduced through the drill head to give a drill speed of approximately 90 RPM, which has been found to be about the proper speed for the ship augers in Douglas fir timber. This machine functioned in a fairly satisfactory manner considering that it was entirely an experimental model.

Since final assemblage, some small mechanical defects have developed and a few changes will be necessary to perfect the machine. For example, friction caused by end thrust of the shaft must be reduced by the installation of a ball bearing thrust washer and also a quick method of coupling the various units is needed.

The machine as now assembled, can readily be carried by two men. For the longer moves it is possible to separate the machine quickly into three units. However, for short moves up to several hundred feet, or from snag to snag, the entire machine may be moved by two men without disassembling.

Sufficient power is furnished by the 1 h.p. gasoline motor to run ship augers from 1" to 1½" in diameter and bore holes up to 32" in depth. It has been found, however, that the 1" and 1-1/8" sizes are more commonly used, since the holes made with these augers take standard powder cartridges easily. It has been determined by experiment that no additional shearing effect is gained by using larger diameter holes requiring more powder

The motor is mounted on a cast aluminum base and weighs 57¼ pounds. The 10' flexible shaft weighs 29¾ pounds and the drill head which is enclosed in an aluminum cast case weighs 26½ pounds. Two 1-1/8" drills weigh 6¼ pounds, making the total weight of the machine 119¾ pounds.

Further experiments will undoubtedly result in considerable reduction in weight. For example, the gas tank can be made an integral part of the cast base which will make the machine more compact and reduce the weight be several pounds.

The Portable Boring Machine is still in the process of development, and yet it has been proven that a light gasoline motor, if properly connected to a drill, will furnish sufficient power for the rapid boring of Douglas fir snags. There are still many minor changes which actual use in the field will indicate are necessary to make the machine entirely practicable and fool-proof.

Further work on the development of the Portable Electric Boring Machine is being carried on by the personnel of the Columbia Forest, assisted by members of the District Office.

DOES THE COST MATTER?

By Roy Headley, Washington

While many of the letters which have been written on the subject of cost accounting urge that costs should be considered in relation to benefits produced, others advance the idea that the Forest Service is not in business for profit and that therefore we do not need to know what our true costs are.

What is there to this idea? The fact that so many men advance it lends importance to the conception and suggests that where there is so much smoke of opinion there must be some fire of truth.

Obviously the Forest Service is not in business for profit as is a storekeeper, or a manufacturer, or a broker. Does it follow from this that the Service has any less need of knowing its true costs than the usual business operator? Possibly the Forest Service does not have to keep its costs below the selling price or the value of the benefits it produces in order to carry on. It is true that many of the products of the Forest Service are intangible and since they often can not be appraised in dollars and cents in any intellectually respectable way, there is little opportunity for comparison of costs with money value of benefits. Where charges are made for our services or for National Forest products, the price is not necessarily determined by the cost of our services or the value of the products. One somewhat spectacular example of this is found in S-22 sales where the average price received per thousand feet cut is 89 cents, while the direct cost alone of making the sales is $1.19.

But is it correct after all to say that because we are not in business for profit we do not need to know true costs? When we manage a range on which 100 head of cattle are grazed, we expect certain things to happen because of our management. Those things, if they happen, have a value even though we find it difficult or impossible to appraise them in dollars and cents. Are we indifferent - should we be indifferent - as to whether the cost of performing our functions in managing the range is greater or less than the value of the things which are supposed to happen because of our management? Does it provide a sound basis for public service to say, as a Forest officer once said, "We should decide what we want to do and then find the cheapest way of doing it." Suppose we decided we wanted to do something regularly in connection with current management of a range which needs no special investigation or investment and found that the cheapeast way of doing it would cost $2 a head. Would it still be all right to go ahead because the Forest Service is not in business for profit?

But someone says "Nobody ever plans to spend $2 a head in such range management." Don't be too sure about that. How do you, or how does anyone, know what we are spending per head or per acre on grazing? We all realize presumably that we have no true cost figures at the present time but it is easy to forget that fact as we talk about the unit grazing costs shown in our annual cost statement.

Some years ago, in connection with the grazing fee controversy, we were called upon for a statement as to the cost of grazing administration. That brought the matter square home to us. The figures shown in our grazing activity costs do not reflect in any degree the expenditures made for protection of range, construction and maintenance of administrative and range improvements, research, grazing special uses, or surveys and maps. Have you any idea how much of an addition to our unit grazing costs it would make if these things were all included in a way which would stand the scrutiny of a competent analyst? I am sure I have not. And yet, until this is done we have no real idea of our true grazing costs.

When one stops to think of it, it is inconceivable that any public service which merits public approval should say in effect "We do not need to know the true cost of the services we are performing; we do not need to attempt to judge the relation of the costs of our services to values, tangible and intangible, produced by them. We are not in business for profit. We expect the public to give us the funds we request and support our work without asking us to go through any process of determining true costs."

If a business operator fails to know his true costs he may lose money or even go broke. That may adversely affect a few besides himself. If a public service fails to know its true costs and correlate its policies and practice thereto it may adversely affect the whole public in ways which are not confined to the economic values involved.

THE EVENT OF THE HOUR IN CONSERVATION

Governors To Get Together On Oil Conservation

Having set in motion the machinery to limit oil production on the public lands, the administration now plans a get-together with the States looking to the extension of its conservation policy beyond the public domain. As its latest move in its oil conservation program, the Federal Oil Conservation Board has received acceptances from several Governors of its invitation to attend a conference called by the President at Colorado Springs on June 10. Many of the Governors will attend in person and bring expert delegates with them. Some have stated their desire to bring delegations containing as many as twenty members, but Secretary Wilbur, chairman of the oil conservation board, in the interest of convenience, has asked that only three delegates be designated as official. The American Petroleum Institute, the Independent Oil Producers Association, the California Oil and Gas Association, and the Oklahoma-Kansas Division of the Mid-Continent Royalty Owners Association all have accepted invitations to attend. The oil conservation board will be represented at the conference by Secretary Wilbur, as chairman, Dr. George Otis Smith, Director of the Geological Survey, and Edward S. Rochester, secretary of the board.

THE AUTO BODY PLANTS ARE ON THEIR TOES

By C. V. Sweet, Forest Products Laboratory

During a recent visit to auto body plants in Detroit to investigate the possibilities for western larch I was especially struck with the anxiety of the executives over the hardwood lumber supply. Body manufacturers are at least one important group of the lumber using public that is not entirely satisfied by the assurances that a continuous supply of suitable lumber is forthcoming. Apparently some progress toward an all steel body is being made on the cheaper, heavier-running models, but the design and manufacturing problems to be solved are of such a nature that the engineers can not yet see even the outlines of the solution. Several advances have been followed by recessions. A company using 300 million feet of hardwood per year with no prospect of being able to get along with less naturally feels that it has to do something — that if it holds down its lumber requirements this year it will have just that much more to draw on ten years from now. It is largely with this idea in mind that they are getting into the use of Douglas fir as rapidly as possible. The engineers are not satisfied with the fir for many of the parts for which it is being used, but it is available in the form needed and they think it is going to be available longer than any other species. The executives are giving active attention to the possibilities of tropical hardwoods.

Large, one-piece, solid parts that formerly were used in body manufacture are giving way rapidly to glued-up stock. The very heavy wastage of lumber that occurred a few years ago in body factories when the large odd-shaped parts were cut from thick lumber has entirely disappeared. Now edgings and trimmings are glued together sidewise, edgewise and endwise, not once but many times, to form blanks from which successively smaller and smaller parts are cut. This all means that the magnitude and importance of the gluing operations have increased tremendously and seasoning becomes simpler. It looks as if their efforts to reduce the waste are actually more to save material than to make immediate savings in money.

As to properties required -- the body engineers seem to put the greatest emphasis on easy machining, ability to take nails close to the edge and in line without splitting, moderate strength and toughness of course, and freedom from excessive variability. The fact that the producers of tupelo and southern ash have not provided a way to eliminate the extremes of variability has given these species black eyes that advertising alone will not clear up.

The woods used in the largest quantities are those coming from the Southern and Appalachian hardwood regions. Northern hardwoods do not seem to be holding their own because of high price and lack of concentration of supply, although considerable quantities are used from small mills as concentrated by those wholesalers who are familiar with body requirements.

The centralized dimension stock and cut-up plant which is being considered by Lake States lumbermen should enable northern hardwoods to keep in the running.

RANGER KEITH COMMENDED

For his courage and leadership in conducting a rescue party through rough snow-blocked country to the aid of a crashed mail plane, Senior Forest Ranger Keith H. McCool of the Whitman Forest has received the commendation of the Secretary of Agriculture and the Forester.

On January 17, Pilot Buckner of the Varney Air Lines, lost in a snow storm, crashed among the high jagged peaks of the Wallowa Mountains in a remote section of the Whitman. Notified of the accident by William Brockam, a trapper who had traveled all night on snow shoes to summon aid, Ranger McCool set out with a rescue party for the scene of the accident. After bucking heavy snow for seventeen hours the party reached the trapper's cabin. The pilot had died a few hours after the crash. The return trip was made over the same difficult route with the pilot's body.

In his letter of commendation to Ranger McCool, the Forester said:

"The District Forester has brought to my attention your organization and leadership of an expedition into the mountains in an attempt to reach an air-mail pilot whose plane had crashed. I need not recite the incidents which have been reported to me in detail in connection with this difficult and hazardous trip. It is sufficient to say that your actions throughout have added to my feeling of pride in the self-sacrificing devotion of men like you who do not hesitate to act with decision and fearlessness in emergencies outside of their official lines of duty.

"To you and your good wife, who, I am informed, took an important part in handling telephone calls and looking after details which were essential to the comfort and effectiveness of the party, I extend my hearty congratulations."

INDIAN FIRES AND INDIAN AGRICULTURE

By E. N. Munns, Washington

One cannot help but wonder whether parts of the eastern coastal plain did not have natural meadows and grasslands similar to the prairies. Much grass land along the Atlantic Coast was undoubtedly in wet or marshy places, but several writers so describe the grasslands that one wonders if fire might not also have been an agency. One of these writers, one Trumbull, in a History of Connecticut, states:

"When the English became first acquainted with that tract comprised within the settled part of Connecticut, it was a vast wilderness. There were no pleasant fields, nor cleared plots. Except in places where the timber had been destroyed, and its growth prevented by frequent fires, the groves were thick and lofty. The Indians so often burned the country, to take deer and other wild game, that in many of the plain dry parts of it there was but little small timber. Where the lands were thus burned, there grew bent grass, or as some called it, thatch, two, three, or four feet high, according to the strength of the land. This, with other combustible matter which the fields and groves produced, when dry in the spring and fall, burned with violence and killed all the small trees. The large ones escaped, and generally grew to a notable height and magnitude. In this manner the natives so thinned the groves that they were able to plant their corn and obtain a crop."

Captain John Smith relates that he found the whole of Virginia covered with timber, and is careful to record that he saw no plains "but only where the savages inhabit." John Reynolds, who was later a governor of Illinois, migrated with his parents from Kentucky and crossed the Wabash swamps during a flood, on a raft of elm trees "deadened by the Indians" taken from a patch of land in the bottoms, which had been partially cleared by burning and so prepared for corn.

Thus not only did the eastern Indians use fire in hunting, but also in their crude agriculture.

YE EDITOR DISCOVERS

A tribute to the Forest Service men who gave their lives in the World War was paid by the members of the Washington office on Memorial Day. A wreath was laid under the tablet which has been placed on the seventh floor of the Atlantic Building in memory of Forest officers who died in the service. On the grave of Stanley R. Augspurger in the Arlington National Cemetery, a wreath was also placed.

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In an effort to reduce the number of roadside smoker forest fires, letters were written to all the leading manufacturers of automobiles and trucks asking their cooperation by making ash receivers standard equipment in the front and rear of all passenger cars and in truck cabs. The response was very encouraging indeed. Two makes of passenger cars are already so equipped. Twelve others have ash receivers in the rear compartment of all sedan models, and their manufacturers stated that they would refer the matter to their engineering staffs for further consideration. Only two of the companies were lukewarm on the subject. The truck manufacturers were even more cordial in their replies than the passenger group. It is confidently hoped that several of the cars and truck cabs will in the near future contain ash receivers as standard equipment.

Although an ash receiver will not stop careless drivers or passengers from throwing lighted matches and cigarettes along the roadside, it will greatly reduce the numbers thrown. Furthermore, it will offer smokers an opportunity to dispose of their smokes in a safe place, as they are accustomed to doing at home and in the office.

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Cooperative arrangements with the Dominion of Canada promise the completion of a comprehensive picture of lumber distribution covering all of North America north of the Mexican border. R. G. Lewis of Toronto, Canada, who is in charge of forest products reports of the Dominion Bureau of Statistics, was a visitor in the Washington office last week. Mr. Lewis discussed with R. V. Reynolds the details of compiling questionnaires gathered in the Dominion showing the distribution of lumber among the Provinces, with special reference to distribution of the heavy Canadian exports to American States. It was arranged last year that the Forest Service will provide a similar statement of the distribution of their exports to Canada, thereby completing the picture. Mr. Lewis studied forestry under Dr. Fernow at Toronto and spent ten years in the Dominion Forest Service.

DISTRICT TWO 1928 PLANTING RECORD

The annual planting report for D-2, which was recently submitted to the Forester, shows that the area planted during 1928 exceeded that of any previous year. As this is the last year in which the Lake States will be included with D-2, it is the last opportunity to make a record, as undoubtedly D-9, with its large area of denuded sand plains which are easily and cheaply reforested with seedlings, will take the honors in the future.

The number of trees raised at the four D-2 nurseries in 1928 totaled 26,886,000: the number of trees distributed during the year totaled 10,573,700. All of these went to Forest Service projects with the exception of 490,500 trees which were raised for States cooperating under the Clarke-McNary law. The area planted totaled 15,019 acres, of which 9,193.4 acres were original planting and the remainder replanting. The large area of replanting was due to the effort made to fill up the fail places in the 1927 drought killed area on the Huron Forest. Of the total area planted, 12,371.3 acres were in the Lake States and 2,647.8 acres in the western portion of the District.

Even though the largest project in the Forest Service (on the Huron Forest) will not be handled by D-2 in the future, there will still be a sizeable planting job in D-2. With local communities interesting themselves in the reforestation of National Forest watersheds, which furnish many municipalities with their supply of water, the area that will be reforested is bound to increase. During the year, two new major projects were authorized and funds were provided by Congress. The first is on the South Platte watershed from which Denver receives its supply of water. There are 54,000 acres of denuded land on the Leadville and Pike Forests in this watershed and a large sized project will soon be under way on the Leadville Forest. The other project that was authorized during the year was on the Pole Mountain division of the Medicine Bow from which the city of Cheyenne receives its water supply. A new nursery is now being established on this Forest. Both projects eventually will have an annual planting job of 1,000 acres each.

The Pike Forest established a new low record for cost in the Rocky Mountain portion of the District, 1,120 acres being reforested at a cost of $7.64 per acre. Two-year Douglas fir seedlings were largely used on this project. On the Huron Forest, 5,468 acres of new planting was done at a cost of $2.97 per acre which is a very low cost for such a large operation. The replanting of 5,377 acres cost $2.35 per acre. - District 2.

SPEEDING MOTOR CARS TAKE TOLL OF WILD LIFE

Wild animals, whose movements and natural increase are restricted by agricultural and industrial development, now face a serious hazard from automobiles, which are increasing in number and are being driven over improved highways at the higher average speeds made possible by modern construction, better servicing facilities, and more liberal speed regulations. Approximately one person in five drives an automobile. The highway system includes more than 615,000 miles of surfaced highways, with approximately 90,000 miles in important interstate routes.

One member of the United States Department of Agriculture, observing the highway menace to wild life, determined to count the animal carcasses he passed while on two motor trips. On a 632-mile trip in Iowa last summer he observed 225 individuals dead along the highway, crushed by speeding automobiles. These included 40 reptiles, 43 mammals, and 142 birds -- 29 species in all. Of the birds, 43 were red-headed woodpeckers and 26 were domestic fowls.

On a tour early in October from southeastern Iowa to northcentral Florida, a distance of about 1,400 miles, a similar count identified 23 species in the death toll of the highway. The 234 individuals included 6 amphibians, 81 reptiles, 45 mammals, 67 birds, and 35 miscellaneous vertebrate forms. The bird list included 23 domestic fowls and 21 English sparrows. Six cats, two dogs, and a pig composed the group of domestic animals other than poultry. - U.S.D.A. Clip Sheet.

EASTMAN ANNOUNCES TEACHING FILM RESULTS

The Eastman Kodak Company of Rochester recently announced the findings in its teaching-films.

Tests were made in 100 schools with about 5,000 children. Two subjects used were geography and general science. Those children who studied geography with the help of pictures in addition to the oral and written instructions of the classroom showed a gain of 33 per cent in that subject. In general science the increased proficiency was 15 per cent.

Not only did the children show marked increase in knowledge of those particular subjects but, according to the teachers, they gained in other ways. Children were encouraged to stay in school which means they will leave better equipped for life. Interest in their work was sustained and they showed a great desire to discuss and write about subjects which were shown on the screen. They also showed a desire to read for themselves and to concentrate in mental activities.

The pictures which were used were carefully made with the teaching process in mind. First, a scenario was written by a picture classroom teacher of liberal education and successful experience. The scenario was then criticised by a group of supervisors and specialists in education.

Teaching-films are not intended to take the place of the teacher, but are for the definite purpose of supplementing instruction in a particular grade and on a particular topic, being always within the intellectual grasp of the children. The pictures do not undertake to tell the whole story of the topic but they are made to stimulate and to arouse the interest of the children, to induce them to ask questions, to lead them to make their own investigations and to read material pertaining to the topic, to obtain detailed and concrete impressions; to think, to analyze, and to make application to real experiences in life.

MR. HARRY H. ENOCH RETIRES

On July 7, Mr. Harry H. Enoch, having reached the age of retirement, will sever his connection with the Forest Service. His services in the Government began in 1900 as a clerk in the Land Office of the Department of the Interior. When the forest reserves were placed under the Department of Agriculture in 1905 he was transferred to the newly created Forest Service where he has since been employed. Throughout these years Mr. Enoch's loyalty, painstaking care, and cheerful cooperation have won a high degree of appreciation from all, and in departing he carries with him the sincere well wishes of many friends

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE
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DEPARTMENT OF AGRICULTURE

Service Bulletin

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Vol. XIII. No. 24 WASHINGTON, D. C. June 17, 1929.

TRANSPORTATION PAST AND PRESENT

By Roy A. Phillips, Nez perce

When the old pioneer gold hunters so assiduously and persistently panned out the colors in the mountain streams of this region and traced down and located all the rich placer fields in the early "Sixty's", the means of transportation was tedious and slow into the boom camps that sprang up like mushrooms after a warm spring rain and almost as suddenly died and disintegrated into dust. The unerring and almost uncanny foresight of these case hardened old sons of fortune in tracing out and despoiling the hidden hoards of gold has been the wonder of succeeding generations, and while their clan has almost vanished from the face of the earth their deeds have gone down in tradition; their towns have tumbled down and rotted away and gradually disintegrated into ruins; the scenes of their mining operations left as scars in the breast of mother nature are slowly healing and becoming obliterated by timber growth.

The routes of travel to these old mining camps mainly followed old Indian trails and when a wagon road finally reached Elk City, one of the old boom towns that somehow survived the fate of its neighbors, it did not deviate materially from the old Nez Perce Indian trail that wound a tortuous route over mountain peaks and between canyon walls from the Clearwater to the Bitterroot Valley.

As with the Indian, speed was not the essence of necessity to the pioneer and he generally built the road as he went, following the line of least resistance without bothering about surveys and other engineering impedimenta. The first wagon track constituted the completed project and it was up to those coming after to follow the route or pick out one of their own. Horses were plentiful and cheap and it was only necessary to gauge the horsepower according to the load it was necessary to haul.

The distance from Stites to Elk City is 55 miles, a mere nothing in this day and age of speed, but even under the best of conditions it is a trip that is not soon forgotten. Stites has an elevation of 1240 feet, but midway on the journey the road reaches an elevation of 6300 feet at the Mountain House, then in a few miles drops down into Newsome Creek to an elevation of 3800 feet, and climbs up over Elk Summit at 5500 feet to wind on down to Elk City 4227 feet above sea level.

In the spring and fall this road is a sea of mud and owing to steep grades and a lack of drainage it is eroded and washed away so that the road bed is five or six feet below the original surface in places and is about as easy to navigate as the bed of a mountain stream. Corduroy in long stretches, shakes your eye teeth loose and takes heavy toll out of the springs of the car or truck. In bad weather the trip is made by a loaded vehicle in low or second gear the entire distance both up hill and down. A set of brake linings will not last a trip unless every advantage is taken of compression in braking on the down grades.

In the winter time it is not unusual to find the ground bare at Stites while there is from 12 to 20 feet of snow at the Mountain House.

Uncle Sam lets a mail contract from Stites to Elk City that aggregates approximately $27,000 a year, which statement leads by the way to the real crux of the story. It took not less than 32 head of horses originally to relay the mail to its destination, but now 2-ton "Cats" do the work with six or eight head for emergencies principally. For two winters now they have hauled the mail over the mountain and rarely have they failed to make it through, breaking their own trail and hauling a loaded sled or wagon as well. The maximum load hauled is 4400 lbs. and the average load 3500 lbs. on sleighs, and somewhat less on wagons. Five miles per hour is the average speed. They have a husky appetite and consume 14 cents worth of gas and oil per mile. Repairs aggregate 6 cents per mile and are made necessary by grouser pins wearing out in the mud. After the snow comes, the wear on the pins is negligible.

Pack mules were first, snow shoes being put on them when the snow got too deep. Occasionally in the winter time the mail was rawhided in, that is dragged in over the snow cargoed up in a cow hide. When it was impossible to get through any other way the first class mail was back packed in, and is yet for that matter. Later the stage coach came and was followed by the auto truck and "Caterpillar" tractor. Any day now it is reasonable to anticipate that the mail to Elk City will be carried by air.

THE EVENT OF THE HOUR IN CONSERVATION

Public Acquisition of Marginal Lands Proposed

The Federal Farm Board, if and when it comes into being under the Farm Relief Bill, would get definite authorization and instructions to bring forestry into play as a measure of farm relief under the terms of a new bill just introduced by Representative Fulmer of South Carolina. Mr. Fulmer's bill declares its purpose to be "To divert lands unsuited for profitable agriculture to productive forestry uses." Under its terms the Federal Farm Board in cooperation with the Department of Agriculture would be authorized to conduct surveys and to designate areas within which a large proportion of the land is of marginal value for agriculture, and which should in its judgment be permanently diverted from unprofitable cultivation.

The Forest Service would be authorized to examine the areas designated and determine what lands are suitable for acquisition by the United States for forestry purposes. Under the conditions of the Weeks Law lands thus recommended could be approved for purchase by the National Forest Reservation Commission. The consent of the legislature of the State concerned would be necessary prior to the purchase.

All lands purchased under this bill would become National Forest lands. The Fulmer bill carries a maximum authorization of $10,000,000 a year for this work.

NOTED FRIEND OF FORESTRY CALLED BY DEATH

With the passing of Joseph N. Teal of Portland, Oregon, the Forest Service has lost an invaluable friend. The Forest Service has long been under special and great obligation to "Joe" Teal for the valiant way in which he repeatedly came to the support of the conservation movement and the National Forests in the early days when the way was roughest. He took a most public-spirited interest in conservation and a most kindly and sympathetic personal interest in the members of the Forest Service. They were "his boys".

Mr. Teal was born in Eugene, Oregon, in 1858. He attended Portland Academy and St. Augustine College, Benicia, California. In 1884, he was admitted to the bar, and began the practice of law in Portland. He served as attorney for the West Coast Lumber Manufacturers Association and other lumbering interests; he was a member of the American Forestry Association and the National Conservation Association. Occuping a position of prominence in the Pacific Northwest, he was always actively and constructively engaged in public affairs. He was the author of a number of pamphlets on conservation and civic problems.

"Members of the Forest Service," says the Chief Forester, "have always had a deep admiration and affection for Mr. Teal. He rendered very notable service in support of conservation, outstandingly so during those periods when the principles for which the Forest Service stood were under attack or threatened. We of the Forest Service therefore feel a sence of obligation to him and a keen appreciation of the timeliness and value of his support."

HANDY AND INEXPENSIVE CAMPGROUND FIREPLACES

By L. F. Kneipp, Washington

Within the Service there exists a wide range of opinion regarding the need for or desirability of equipping National Forest campgrounds with fireplaces. From a protective standpoint the need varies according to the character of the specific camp. In some, fire risk is low. occupancy is light, rocks suitable for homemade fireplaces are readily available, and considerable expenditures for fireplaces hardly could be justified. In others, deep duff capable of holding fire for long periods, generally high fire risks, heavy use and absence of available means for holding fires, all tend to make fireplaces good investments. In the main, however, the attractiveness of National Forest camps is greatly enhanced, and the danger of promiscuous camping greatly reduced, by the existence of simple but convenient fireplaces.

Our fireplaces range all the way from holes in the soil filled with charred embers, to elaborate conglomerations of native rock and concrete which often cost a great deal more than they are worth. A happy medium long has been desired. District Five thinks it has been found in the form of the galvanized iron cans which are used in the manufacture of artificial ice, and which are discarded by the ice companies as soon as they become sufficiently worn to leak, As a rule the ice companies are willing to sell such cans for nominal sums.

District Five has purchased 250 such cans at 15¢ each, and is affixing to each, at a labor cost of 14¢, a cast iron collar which costs 26¢, and 2 joints of stove pipe which cost 25¢; the total investment per fireplace thus being 80¢. In advising the field of the availability of these campground fireplaces, the District Office made the following statement:

"The cans are four feet long, two feet wide and one foot high, and of a good weight of galvanized iron. They will be provided with a cast iron collar riveted to the can and two joints of stove pipe, making a very good camp stove.

"In order to make these stoves last and give the best service, we suggest that instead of setting them on the ground, that a rock wall be built about 15" high; the center filled with rock, gravel or dirt, and the stove set on this foundation.

"If desirable the rock wall can be built up on both sides of the stove. A six foot stake should be driven into the ground at the back end of the stove to which the stove pipe should be wired.

"If set up on a rock platform of this kind the stove will be a convenient height for cooking and will not rust out so soon as if set directly on the ground.

"It is not necessary to set the rock wall in cement as a well built foundation of loose rock is satisfactory. If fixed up in this manner these ice can stoves should last for several years. And as they cost less than $1.00 each complete, they make a mighty cheap and effective fireplace for our public camps."

ON THE WICHITA

By Charles Allen, D. 2.

A man with wife and 3 youngsters stopped his car at one side of the Exhibition Pasture. They scrambled out of their auto and made haste to reach the woven wire fence. There leaning against its wires, they looked on with keen interest.

"Oh, look- a baby buffalo. Ain't he cute mother," said a little miss of tender years.

"I don't know 'bout that," her older brother scorned. "He ain't even got a hump, and he's all legs, and he's yaller."

Another brother spoke up: "You just wait till he grows up tho and I'll bet he'll have a hump and some horns too. And he wont be yaller neither. I bet he'll be just like that un over there. An' he'll have long whiskers too."

The mother buffalo squared around, looked at her visitors suspiciously for a moment, then slowly walked a few rods farther away from the fence; the calf hugging her side.

General Lawton, 25 years of age, largest, oldest and only remaining bison of the original Wichita herd, and father of the calf, stood his ground close to the fence. With lowered head, he looked at his audience through snappy, black eyes.

"Gee I bet he'd fight," brother said.

"Mother, please let's go," said sister, "I'm afraid."

"Cowardy, cowardy," brother sneered. "He can't hurt us through this fence."

"Dan," said the woman, "isn't it just wonderful to come out here to the Wichita. There's so much of interest. Now isn't it worth coming miles and miles to see that buffalo calf. Look how close he sticks to his mother's side. And see what a protective air she has and how she caresses it with her tongue. And then that huge male buffalo over there. Did you ever see one so large?

"No, I never did, the husband replied, "and I've seen lots of them. And those other animals over there," he went on pointing towards the mountains." They look like Mountain sheep. I see some elk too, over towards the timber. Guess they have deer and antelope and a herd of Longhorns also." He turned to the car and added: "Well, we'll have to be going over to Lost Lake and fix up camp."

General Lawton walked up close to Mrs Lawton and the calf, and undoubtedly said to her in buffalo language: "Well mother guess we've shown off our youngster enough for one day. Let's go over to the creek and get a drink."

At which they started, with their offspring, in the direction of a near-by stream

GNAWING SQUIRRELS AN AID IN MATTER OF PINE BLISTER RUST

By Bernard Frank, Washington

Some time ago I wrote in these pages of the "bark-chewing" tendencies of the red squirrel in the Southern Appalachian highlands, without attempting to state any definite reasons for this behavior.

Judging from the following article which appeared in the Kennebec Journal, Augusta, Maine, sometime during the first week in March, there are occasions when this animal, in his surpisingly "feminine-like" cravings for "sweets", may render distinctly meritorious service:

"Don't shoot flying squirrels or red squirrels if you see them gnawing the bark of white pine trees. They are doing a piece of good work and their gnawing is really a blessing in disguise.

"W. O. Frost of the State department of forestry, State leader in blister rust control work, is authority for these statements, based on his experience in studying this disease of pine trees.

"He explains that the squirrels know bark afflicted with blister rust tastes good. It becomes thickened at the points where the blister rust has worked and is granular and sweet. The squirrels are seeking the sweetness, and as they eat the bark, they destroy millions and millions of spores that would eventually be freed and travel on the winds to currant and gooseberry bushes, thence to blow back to pine trees and infect them anew with the blister rust.

"Mr. Frost received, Monday, three badly gnawed sections of a pine tree from a timber owner in Brunswick who wrote that he had killed a flying squirrel he had found eating the bark, and evidently thought he had rendered himself and others a service by doing the deed But Mr. Frost read the story on the pine limbs otherwise. He found the tree was completely girdled with blister rust and would have died in any case, so that the squirrel's work would have made no difference, but if he had been allowed to live, he would have probably destroyed other millions of the spores before they were freed on the air.

"The spores as they leave the pines are long lived and can travel 100 miles, according to Mr. Frost, so that their destruction before they start their journey is much to be desired. The returning spores that spread from currant and gooseberry bushes to pines have a range of only about 900 feet.

YE EDITOR DISCOVERS

The Secretary of Agriculture was a guest of the Forest Service at a specially prepared camp in the Shenandoah National Forest for the week-end following Memorial Day. He was accompanied by Major Stuart.

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We are welcoming to Washington the New Assistant Forester in charge of Public Relations, Mr. Fred Morrell. Mr. Morrell has taken active charge of the Branch. After battling forest fires in D-1, we expect the new A. F. is going to find it pretty dull in Washington. However, with the whole eastern United States presenting a problem perhaps more difficult of solution than fire prevention on the forests of D-1, he is going to be a pretty busy A. F. Possibly the W. K. Washington hot spells will remind him pleasantly of, say, a Kaniksu front line.

Kittredge of the Lake States Experiment Station, Dr. Stamm of the Forest Products Laboratory, and Munns of the Office of Forest Experiment Stations have been designated to attend the International Congress of Forest Experiment Stations to be held in July at Stockholm. They will also make a study of the development of forest research in several other of the European countries. Professor Toumey of Yale, Barrington Moore of the Ecological Society, and P. R. Gast of Harvard, and between 150 and 200 foresters engaged in forest research are expected to attend the Stockholm meeting. This is the first time the Congress has met since 1914.

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Meeting to consider the soil erosion problems of the Southwest, a Southwestern Soil and Water Conservation Congress will be held at the Texas Agricultural and Mechanical College June 20 and 21. The agricultural colleges of eight Southwestern States are organizing to solve their erosion problems, and at that meeting will invite farmers, farm editors, railroad officials, bankers, and representatives of fertilizer companies and millers to assist the extension and research workers of the States in planning an erosion prevention program which will coordinate with the national program approved by Congress. A. B. Conner, Director of the Texas Agricultural Experiment Station, and a member of the National Erosion Committee was recently in Washington to discuss with other members of the committee the program of soil erosion prevention now under way.

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Canada's pulp supply, her forests, and the problems connected with their development are receiving the attention of three members of the faculty of forestry of the University of Toronto. Professors T. W. Dwight, J. W. White, and R. C. Hosie are making a study to determine the non-productive areas and the possibilities of reforestation. More than 60 per cent of the northern forests have been burned during the last half century, they say, but Canada nevertheless will have to depend very largely upon these lands for its future supply of pulpwood.

MISSISSIPPI FORESTRY COMMISSION WINS CUP

The Mississippi Forestry Commission won the forestry poster contest held by the American Forestry Association. The award of the silver cup was made at the last annual meeting of the Association at Jacksonville, Florida. The first contest was won, it will be remembered, by tho Western Forestry and Conservation Commission of which E. T. Allen is Forester.

The winning poster depicts a forest scene with the all consuming fire demon, in the guise of the red wolf, approaching from the right. The title "Fire the Destroyer - Keep him Out", is prominently displayed at the bottom. At the extreme left appears the Mississippi Forest Service shield. It is an exceedingly striking and effective production.

The judging committee consisted of Miss Eloise Gerry, of the Forest Products Laboratory, Madison, Wisconsin; W. A. Shell, of Searcy and Pfaff, New Orleans, Louisiana, and John A. Cobbs, of the Atlantic Coast Line Railway, Wilmington, North Carolina. The poster selected by the committee combined arresting power, direct appeal, visibility, an easily understood message, and good composition to a greater degree than any of the other posters exhibited.

THE NATIONAL FOREST MEMORIAL ASSOCIATION

Much has been written during the past several years regarding the Kiwanis forest plantation on the Huron Forest and the De Molay plantation in D-6. The idea of planting a memorial forest is evidently taking root judging by an application recently received from F. J. Tooker of Crestone, Colorado. Mr. Tooker wishes sufficient trees to plant 10 acres on the San Isabel National Forest. He proposes to take care of these trees, reset where necessary and, at the end of five years, turn them over to the Government for protection. He further proposes to organize the National Forest Memorial Association with the idea of reforesting denuded areas on the National Forests.

As a starter, it was suggested to Mr. Tooker that he plant one acre of trees next spring, and if he is still agreeable to the idea after 700 trees are set on a steep, rocky hillside, additional trees will be given annually to enlarge his plantation.

If planting allotments have not come to your Forest in sufficient size to make a dent on the area of denuded land, here is an opportunity for Supervisors to start this much needed work. Perhaps a slogan writer can make planting popular by coining a phrase such as "For that tired feeling, plant an acre of trees for your Uncle Sam ." - District 2

BOB CAMPBELL LEAVES

By Jno. D. Guthrie, D-6

Forest Supervisors on detail to the Washington office back in 1907 and '08, working in "the bull pen", willremember Bob Campbell. It was he who rode herd on that unruly western bunch. His main job was to edit their official correspondence, prepared for the Far West, and generally to "wise them up" on official procedure. Supervisors were more leisurely in those days, at any rate they wrote longer letters, and Campbell's main job was to shorten and clarify what they wrote.

Robert L. Campbell entered the service on Dec. 16, 1903, before there was a "Forest Service". He remained in the Washington office until July 1, 1908, the year of the Great Exodus, when he came West to D-1, where he remained until 1910. From D-1, he came still further West, landing in Bellingham on the then-called Washington Forest. Here he helped Harry Park run that bunch of unmapped roughness, first as clerk and later as deputy supervisor for eleven years. He saw recreation development come to the Mount Baker (the old Washington Forest was rechristened the Mount Baker in 1924), in the opening up of some of the wild beauty of that region along the Nooksack River and in Heather Meadows.

He also went through one or two severe fire seasons on the Mount Baker, the Forest which once was thought to be fire-proof. Then on January, 1927, he was transferred to Oregon and since then has made his home on the Umpqua Forest at Roseburg. He has resigned effective June 4, and will enter business in Portland.

Bob has seen many changes in the Service. He saw the creation of the "Service", went through the establishment of the Western Districts, and later the beginning of development on the Mount Baker. And now, with over 25 years of service he resigns to settle down in Portland. Our best wishes for good luck go with him, and we shall probably see him now and then in the District Office of D-6 .

A NOTABLE TREE

By E. N. Munns, Washington

Many of America's early historical events took place beneath trees, and all over the country are trees noted for the events they have witnessed. One that has long since perished, and one that is seldom noted in our historical references, is the famous elm at Boonesborough, Kentucky. At Boonesborough delegates gathered in response to a message sent out to the scattered settlers regarding the desirability of establishing some form of local government, and of devising some measures to be taken for the protection of the handful of people then living to the westward of the mountains and south of the Ohio.

The delegates met about the 15th of May 1775, and, as the fort was not yet completed, the meeting was held under a giant elm and the articles for a local government were agreed to in the following days. Under this same elm, the first argument as to the purchase of land in Kentucky was ratified by the "House of Delegates" on May 27. On May 28, the first recorded church service in the region was held, attended by the members of the House of Delegates and perhaps a number of others from the nearby region. This must have been an impressive service as all were armed against possible Indian attack, which sobered the deliberation of the body as nothing else could have done; those present were of the hardy pioneer stock from the Virginia Valleys and Carolina plains of English and Scotch extraction largely; they realized the import of their previous deliberations perhaps even to a greater extent than we give them credit; and they had a common bond in the dangers to which they were constantly exposed and in their own interests which they were forwarding and making secure. Then, too, the service must have been impressive because of the simplicity of the meeting; there were no appointments, no bell, no music other than the voices of the audience, no women, no children.

Judge Richard Henderson in his Journal for May 14, 1775, describes the scene of these events: "About 50 yards from the place where I am writing .... stands one of the finest elms that perhaps nature ever produced in any region. This tree is placed in a beautiful plain surrounded by a turf of fine white clover, forming a green to its very stock to which there is scarcely anything to be likened. The trunk is about four feet through to the first branches which are about nine feet from the ground. From thence above, it so regularly extends its large branches on every side at such equal distances as to form the most beautiful tree that imagination can suggest. The diameter of its branches from the extreme ends is 100 feet - and every fair day it describes a semi-circle, on the heavenly green around it, of upward of 400 feet, and any time between the hours of 10 and 2, one hundred persons may commodiously seat themselves under its branches. This divine tree...... is to be our church, state-house, and council chamber."

FILM FUTURE BRIGHT

New York, May 3 (AP) -- One hundred million persons attend the movies each week, according to William Fox, president of the Fox Film Corporation and one of the leaders in the industry.

In a recent radio address Mr. Fox traced the development of motion pictures from their inception and predicted that the greatest part of the industry's development was still before it.

He said the present investment in this country totaled more than $1,750,000,000 and that the annual amount paid in admissions at theaters exceeded $750,000,000.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture

February 1, 1905

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VOL. XIII NO. 25 WASHINGTON, D. C. JUNE 24, 1929

TWENTY-FIVE YEARS OF SERVICE

By William G. Durbin, Lassen

In many instances men have just happened to get into the Forest Service and have stayed with the job for years. My entering the Service was due more to curiosity than to any other reason. For a number of years prior to August, 1903, I had worked for the Gauley Lumber Company of West Virginia, a big outfit which seemed to do a flourishing business. But in 1901 the mill closed down and the entire property was taken over by the Baltimore & Ohio Railroad Company.

In 1901-1902 I assisted in making a cruise of the remaining timber on the company's holdings and was often called on for data on some of the details of the work with which the superintendent was not conversant. On one of these occasions in 1903 he informed me that the B. & O. was not satisfied with the estimate of the timber shown by our cruise and that the company had arranged with the Government to have the timber cruised by the Forest Service.

"Forest Service!" I said. "Who is the Forest Service?"

He did not know, but supposed that it was some division of the Government that offered expert advice on timber estimating. This was all that was said on the subject except that we expressed an opinion that when the "city birds" took about one trip over the steep slopes of the Gauley River watershed they would be ready to return to Washington. However, I could not rid my mind of the thought that the B. & O. Company could have more confidence in the work of these men than they had in that done by their own men who had been considered for years as good timber estimators.

A few days later I met the superintendent and inquired, "How about the Government foresters?" The superintendent told me that he had received a letter giving the date on which the foresters would arrive and asking him to employ a cook. He added that as I seemed to be interested in this outfit I had better take the job. I had cooked for large crews of lumberjacks but to get up dainty dishes such as I supposed would be required by men holding Government positions, would, I thought, probably be out of my line. However, I consented to tackle the job.

On the afternoon of August 2, 1903, when the train rolled into the depot at Cowan, the foresters arrived, and, to the surprise of the natives, they were just men. They did not have horns, neither did they wear patent leather shoes. I met the outfit and we left the next morning for the hills. One wagon was hired to transport the equipment, supplies, and myself. The foresters headed by John Foley "hiked" to where we made our first camp, 25 miles distant. The fears I had of not being able to cook dainty dishes got a cold water bath when Foley handed me the list of supplies he wished purchased. So far as I can remember there was not even anything as dainty as a can of fruit.

There were about nine men in the crew. John Foley, who now holds a responsible position with the Pennsylvania R. R. Co., was in charge. The other members of the crew were Clyde Leavitt, Ringland, and George Cecil, who were afterwards District Foresters; Rothkugel, who turned out to be a dancing master; Teasdale, who left the Service and later accepted a position as auditor for the Utah Construction Co.; Hodson, who I believe is now a lawyer; the late John Keach and Douglas Rodman, and several whose names I can not now remember. In my more than 25 years of experience in the Service I have never seen a crew of men so interested in their work or who worked so hard as did the men in Foley's party. When they left camp they went on trips of from four to five days. Each man carried one blanket and among them they carried sufficient supplies for the trip. Their subsistence supplies on these trips consisted mostly of rolled oats, hard tack, and bacon. Their camps were made on the side of the mountain wherever darkness overtook them. The cruise sheets were worked up during the one or two nights a week and Sundays that the crew happened to be in camp. This crew will probably go down in history as producing a higher percentage of men who afterwards filled responsible positions in the Service than any other crew.

Before the end of the season Foley offered me a job with a party going to Texas the coming winter. I accepted and went to Washington, D. C., with the crew when the West Virginia job was completed. On Nov. 23, 1903, I received my first appointment, the title being "Agent in the Bureau of Forestry." After spending about one month in Washington, I left with the crew for Texas. We arrived there about December 1 and stayed until the following March. Hugh Curran, commonly known as the "strenuous man" of the Forest Service, was in charge of the party and proved, if anything, even more ambitious than John Foley.

There were about 11 men in the crew, those I can recall being Jerry Ramskill, Cheney, Bond, Keach, Pearson, Hodson, Burrall, Skeels, Curran, Cecil, Cramer, and Percy Brown. Everything went fine on this job. It was not even necessary for the men to have their clothes laundered as they got drenched every day and a lot of the time they were wading in water up to their knees. Razor-back hogs were plentiful and we lived on the fat of the land as far as razor-back meat was concerned. C. S. Chapman was in charge of another party working in this general locality. He visited our camp several times and we have been friends ever since.

On completion of this job we returned to Washington and after a short stay I went to southern Tennessee with a party headed by John Holmes to make a study of the second growth hardwoods of that region. Raphael Zon had much to do with this work although he was only on the job a few days during the season. It was on this job that I first met Walter Mulford. He spent a few days at our camp and as bedding was scarce we shared the same bed. The crew also did some work on the Little River Lumber Company's holdings near Townsend, Tennessee. Here we met a somewhat different class of people from those we had met in the other sections where we had worked. The Black Hills country was full of moonshiners who looked upon us as so many Government spies.

When the job was finished we again returned to Washington and after a few weeks in the computation room I left with a party headed by Braniff to make a mill scale study on a lumber operation in the mountains of "Old Virginia." This operation was located near the boundary of about three States so that when some small crime was committed, such as shooting a man, all the criminal had to do was to take a half hour's walk and he was safe in another State. The members of this crew were Cecil, Von Bayer, the late Margolin, Everett, who was afterwards murdered in the Philippines, a fellow by the name of "Bob," and probably one or two others whose names I can not now recall.

Upon the completion of this job and when on the way to Washington I had an attack of mastoids which developed into a very serious case. During the time I was in the hospital, Mulford visited me and with him was Bill Greeley. This was my first meeting with Greeley and I little expected that I would see so much of him in later years. It was not until some four months later that I was able to report for work. This was in June, 1905.

Upon returning to the office it seemed to me as though the whole world had turned over and everyone had taken a new lease of life. The management of the then Forest Reserves had been transferred to the Department of Agriculture. Men were being assigned to jobs in all parts of the West. About July 1, I was assigned to Paul Kelleter's party that was going to make a study of white fir. The work was to be done on the McCloud River Lumber Company's holdings in California. Eli Eldredge and I left for San Francisco about July 1. We lost several days' time in getting through on account of wash-outs on the railroads. Boarding on the Pullman bore down heavily on our finances; in fact, so heavily that when we reached San Francisco, we were financially embarrassed, even to the breaking point. It was here that I first learned the true meaning of cooperation. Eli borrowed my six shooter on the pretense that he wished to have it for protection but a little later showed me five "bucks" which he said he had been able to get from a pawn broker on my gun. When I asked him where I was "getting off" he told me that "this is a cooperative proposition, - you furnished the gun and I got the money."

About July 10 we landed on the McCloud job. Kelleter was in charge with Merritt Pratt as second man. One of the principal drawbacks on this job was the boarding house rules. We boarded with the caretaker of an abandoned logging camp belonging to the McCloud River Lumber Company. Meal hours were - breakfast at 4 a.m., no noon meal, and supper at 4 p.m. The old man's chief occupation was fishing. Fifty fish per day was the limit and this was the number set before us every morning. His wife claimed that cooking fish was her long suit. One side of the fish was always burnt to a charcoal while the other side was raw. We carried a lunch and mostly ate it about 9 a.m. as this was about half way between the breakfast and supper hours. By the first of October we had felled 4,800 trees and the job came to an end.

After assisting in planting several acres of yellow pine seed near the town of McCloud, Eli and I went to the Sierra Forest where we were employed on timber survey work for a couple of months.

Upon completion of the Sierra job, I was assigned to assist Phil Harris in making a cruise of the timber on the Mt. Pinos section of the Santa Barbara Forest. I met Harris at Lancaster and we landed at the Frazer Borax mine on Thanksgiving day. This trip from Lancaster to the Frazer Borax mine has always remained bright in my memory. I believe it was about the coldest day I have ever experienced and the stage team was made up of one horse and one mule, which according to Phil Harris' way of thinking had come over in the ark. At that time Col. Greeley was in charge of all Government timber sale work in California and frequently visited our camp. After completing the field work we went to Bakersfield where we spent something like a month in working up the figures.

From there I was assigned to timber sale work on the Klamath Forest. I reached Yreka about the 27th of March, 1906, and met Forest Supervisor Bigelow who had just arrived to take charge. His entire office equipment consisted of a typewriter, pen and ink, and a few sheets of paper. C. J. Buck, who is now Chief of Lands in District 6, joined me and we cleaned up a lot of small timber sale work. All up and down the Salmon River was a district of dissension. The natives - or rather half-breeds who composed a large percentage of the population - were even more considerate of the policies of the Forest Service than the whites were. Buck and I thought at one time that we were going to be ridden out of Sawyer's Bar on a rail.

From the Klamath I went to timber sale work on the Plumas. Landing on the Plumas on the 26th of June, 1906, I met Forest Assistant Powers and worked with him until October 15, at which time I was transferred to the Tahoe Forest to fill a temporary special scaling job near Lake Tahoe.

Upon completion of this job I returned to Quincy and worked in the office there until February, at which time I was detailed to the Stanislaus Forest to make an estimate of the timber on the memorable first sale that was made to the Standard Lumber Co. Most of the time we were working in a country covered with from 4 to 6 feet of snow.

Later I returned to the Plumas where I worked at about every kind of a job that Lou Barrett could think of for me to do. My major work, however, was looking after the timber sale work along the Western Pacific Railroad from Quincy to the southern boundary of the Forest. At the suggestion of Colonel Greeley, I had taken the ranger's examination in the fall of 1907 and received an appointment as Forest Ranger on March 1, 1908. On July 1, 1908, I was promoted to Deputy Forest Supervisor, which position I held on the Plumas until May, 1914.

On July 1, 1914, I received the appointment of Forest Supervisor of the Modoc. On March 1, 1922, I was temporarily assigned to the District office as Forest Examiner in connection with insect control work in southern Oregon and northern California. On June 24 of the same year I returned to the Modoc and stayed there until April 1, 1923, when I was transferred as Forest Supervisor of the Lassen, - the only National Forest in the world which surrounds a living volcano.

STANDARD COSTS

By Roy Headley, Washington

Cost keeping is often spoken of in connection with standards.

The necessity for standards is more and more recognized as the quality of Forest Service administration advances. The chief issue is no longer "do we or do we not need standards?" but "what form of standard will be most useful to us and how best can we work it out?"

The idea often appears in correspondence and discussions that one of the important uses of cost records is to establish standards. There is something to this. When a road contractor employs the best modern equipment and methods for moving earth and every element of his operation is under control and working the way he knows it should, his costs per cubic yard represent good reliable working standards.

But suppose that he has a foreman who neglects the planning and scheduling that road construction requires; or suppose the grader men have a hobby for art in road construction and in riding this hobby move 25 per cent more material than the specifications require and permit to be paid for. In such an event the resulting unit costs are not worth much as standards.

Speaking of specifications brings to mind the fact that before most kinds of National Forest work, like grazing and timber sales, can be said to be "under management," correct specifications must be prepared. Before grazing work can be said to be "under control" in the sense that well managed road construction is under control, there must be informed decisions as to just where the grazing work is heading for, how it is going to get there and what kind of work and how much work is to be done. Such decisions when reached must be expressed in some definite way so that subsequent management steps may be built on them and responsible men held to accountability in an effective way. The writing of such specifications for grazing work is a big job. We are hard at it but it is far from being completed. Mr. Rachford and several District men are making a fresh attack on the job this season.

Until specifications have been written for the grazing job our cost records merely show part or all of what we spent. That is likely to be useful information and should stimulate our effort to draw specifications for the job and the development of cost standards but the cost figures can not be taken as cost standards.

Generally speaking, if a Forest executive wants a standard cost he must get it in much the same way as a logging engineer gets his standard costs. First comes analysis. Picking the job to pieces. Finding out why the job has to be done at all and why it should be done one way rather than another. Then determining the cost of each detailed step or process with things working as they should be expected to work. This calls for tests, and precise observations and records. Generalities and loose guesses won't do. Then comes synthesis - building a calculated total cost from the correctly determined details. This produces a standard cost in one stage of its development.

And then comes the final test. The operation gets under way according to the plan and schedule adopted and the resulting unit costs are compiled. Our activity costs should be a test of the analysis, synthesis, planning and scheduling which have entered into our predetermined costs. And by working back and forth between our predetermined costs and our actual operating costs we can shake out something which deserves to be called a standard cost for the job,

ONLY A NUT IN 1852 BUT WORTH $1,000 NOW!

By Emma H. Morton, D. 6

When this heading wrote itself in front of my eyes the thought came - "Well, perhaps there's still hope for some of our acquaintances." But laying jokes aside, this is a good, true story.

While Mrs. Leah Hutton probably never heard of a B. S. F. or a M. F., yet she was a real forester. She must have been an all around "regular" too, because the old-timers in the Willamette Valley, Oregon, can tell you how she killed a mountain lion with an axe - But that's another story.

Back in 1852 when she started out to cross the plains with a pioneer outfit en route to Oregon Territory, she tucked away seven big, black walnuts in her handbag. (Not having to carry accessories like cigarettes, lipstick, rouge and whatnot, she had a little unoccupied space). With her family she settled on a homestead near Silverton, Oregon, and being a good forester, right away she planted those seven nuts.

The soil on the homestead is a rich loam and five of the nuts grew mightily and prospered. Today they are the pride of the Valley. The largest of the five is 4½ feet in diameter and has a spread of 140 feet. Recently a Portland furniture company offered $1,000 for the tree to the present owners of the homestead, Mr. and Mrs. W. H. Balch, but they refused to part with their old friend. Doubtless, as Omar Khayyam used to wonder "what can the vinter buy more precious than the thing he sells," the Balches evidently could not envision anything to be bought with the $1,000 which would be more precious than their black walnut tree.

YE EDITOR DISCOVERS

More than 10,000 children, chiefly from the 6, 7, and 8th grades, in the District of Columbia schools attended Forest Week meetings held this year under the auspices of the Forest Service and the Superintendent of Schools. Each of the meetings included introductory remarks by a school official, a talk by a member of the Forest Service, singing by the children of a song (in most cases Everard's "On Forest Land," which was thrown on the screen by means of lantern slides) and a motion picture. Major General Neville sent a section of the Marine Band to play at the opening meeting, which was addressed by the Forester. Five motion picture houses gave the use of their auditoriums and provided operators; other meetings were held in High School assembly halls, and the auditorium of the New National Museum. S. L. McLaurin, formerly of the Forest Service, managed the meetings held in the colored schools and introduced the speakers.

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The National Conference on Outdoor Recreation, which was inaugurated by President Coolidge in 1924 to bring together the many national organizations interested in conservation and outdoor life, will terminate its activities on July 1.

A series of fact-finding surveys of the recreational resources of the United States - municipal, county, State, and Federal lands - were made and reports on them have been forwarded to President Hoover. In transmitting these reports to the President, Chauncey J. Hamlin, Chairman of the Conference, said in part:

"In this conception of nation-planning the Federal lands occupy a position of key importance for they comprise about one-sixth of the continental area, and include particularly the public domain and the National Forests, Parks, Monuments, Game Refuges, and Indian Lands. However, the Federal responsibility for the appropriate use and enjoyment of the natural organic resources of this vast estate has been but partially assumed. On the public domain waste is apparent - through soil erosion, forest fires, pollution, and overgrazing, with consequent depletion of plant life, wild life, silting of irrigation works and loss to the stock industry.

"The study of Federal functions in education recently recommended by Secretary Wilbur to be carried on by an advisory committee composed of representatives of the great educational organizations suggests an analagous study in the field of conservation of the organic natural resources of the Federal lands. Such a study should promote a continuity and harmony of policy in Federal land administration, for which several of the Departments are now responsible."

Chairman Hamlin has expressed his appreciation to Secretary Hyde for the cooperation furnished by former Secretary Jardine, the Forest Service, and the Biological Survey. He particularly mentioned Colonel Greeley, Herbert A. Smith, L. F. Kneipp, Ward Shepard, and C. E. Rachford of the Forest Service; and Dr. Nelson, former chief, Mr. Redington, Mr. Henderson, and Mr. Goldman of the Biological Survey.

"The Department of Agriculture," he says, "was of particular assistance in furthering the work of the Coordinating Commission on National Parks and National Forests, and that of the Commission on the Conservation of the Elk of Jackson Hole, Wyoming, auxiliary committees of the Conference. It is generally accepted that the work of these committees contributed materially to the plan-wise management of the Federal lands and their resources."

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William K. Williams, Jr., recently appointed by the Office of Cooperative Extension Work to fill the position of Extension Forester, expects to arrive in Washington and begin his new duties about July 1. During the past two years Mr. Williams has been State Extension Forester for Arkansas. Prior to that service he was for several years forester for the Crossett Lumber Company of Crossett, Arkansas, following a period of studying forestry in Sweden as the result of securing an Honor Scholarship during his studies in the Yale Forest School.

"OLDEST LIVESTOCK ASSOCIATION"

By John H. Hatton, D. 2

In the Daily News - Intermountain District of February 18, 1929, appears an item under the above title mentioning the claim of the Payson Livestock Association to being the oldest association of its kind cooperating with the Forest Service. It appears that its first meeting was held October 10, 1905, and that recognition by the Service was extended nearly a year later. The article closes with something of a challenge in the following:

> "If any livestock association can boast of
> a longer record, let's have its history published. -
> Uinta Digest."

The following four livestock associations in D-2, all of which are still active, record earlier recognition dates.

Association	Forest	Date Recognized by F.S.	Date Organized
Carbon Co. Woolgrowers'	Hayden & Routt	1906	Prior to 1900
Egeria Park Stockgrowers'	White River	5/7/06	
Gunnison Co. Stockgrowers'	Gunnison	8/8/06	5/10/1884
Snake River Stockgrowers'	Routt & Hayden	9/22/06	4/2/1895

The Carbon County Woolgrowers Association was incorporated in April 1900 and has been a very active association to the present time. The Gunnison County Stockgrowers Association organized early for the protection of the mutual interests of its members. It has functioned without a break all the years since its organization, 45 years ago, and has been a prominent factor in the development of the livestock interests in Colorado. One of the principal purposes in the organization of the Snake River Stockgrowers, now 34 years old, was to help divide and enforce lines between the sheep and cattle ranges.

A POSSIBLE TIME SAVER

The Santa Barbara Forest, which has a heavy business in special-use permits, has devised a method of recording such permits which may be of interest to other National Forests. No card record on Form 619 is maintained, but through the use of rubber stamps a somewhat comparable record is carried on the outside of the folder of each special-use case. One stamp is placed on the face of a folder in the upper left-hand corner. It is 2¾ inches wide and 3½ inches high and is divided into seven horizontal spaces labeled "Kind of use," "Date of issuance," "Amount of charge," "Date of revocation," "Acres - Miles," and finally "Remarks."

The second stamp is placed on the front of a folder in the upper right-hand corner. It is 4 inches wide and 3¼ inches high, divided into eleven horizontal spaces and three vertical columns, the first headed "Period," the second "Voucher" and the third "Amount." This provides space for entries of payment for eleven years.

The folders are filed alphabetically by classes of use.

According to the Santa Barbara force, this method gives them a complete and ready record of all facts necessary for the compilation of annual reports on Form 446 or for other purposes, in close correlation with the folder and detailed record in each case and therefore is superior to the maintenance of a separate record on Form 619. Apparently it works very effectively, for the Santa Barbara special-use files are the acme of neatness and completeness. - L. F. K.

VALUABLE TODAY - DESPISED TOMORROW

By E. N. Munns, Washington

Consider the lowly sassafras. Where it grows in the hardwood forests of the east it is looked down upon, is designated a weed, is destroyed at every opportunity. Yet so plentiful was the sassafras on Jamestown Island three hundred years ago, that the early colonists became engaged in collecting its roots and bark to the neglect of their corn fields. At a later period, about 1620 or 1630, it was associated with tobacco as one of the two commodities from Virginia offered in large quantities for sale in London. It seems strange too that at the time when shipments of the roots were heaviest, the colonists were experiencing trouble with the Indians and were penned up in a comparatively restricted area. The constant apprehension of an attack prevented wandering any great distance in search of sassafras and the ease with which it was procured under circumstances so adverse, is a very strong indication that it grew quite thickly in the whole valley of the Powhatan.

The meaning of the word "Wyanoke," the name given by the Indians to an area of country on the north side of the Powhatan, was "land of sassafras," from which it may be inferred that this tree grew in great abundance there. It is quite probable that the tree was found in the greatest abundance on old abandoned Indian fields as today it is not uncommon to find it similarly on old fields in the Appalachian mountains.

It is of interest to note that the Virginia Company in 1610 instructed the authorities to return to the mother country among other things, sassafras roots, bayberries, walnut oil, pine, oak and walnut trees; (seedlings and larger trees for ornamentation), and pitch and tar. Sassafras was most in demand and yielded profits greater in proportion to the amount shipped than any other commodity. Care had to be taken, however, not to overstock the market, which could easily happen with the introduction of too great a supply.

If sassafras, one of many species once considered of high value can pass through such a cycle, what of some of our present day highly valued species?

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people*** Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII No. 26 WASHINGTON, D. C. JULY 1, 1929

AN AGE OF CELLULOSE

(From an article entitled "The Utilization of Our Agricultural By-Products " by Secretary Hyde in the July issue of the National Republic Magazine.)

Our chemical laboratories point out to us an Age of Cellulose, which challenges our imagination. What is cellulose? This is the substance - consisting of three chemical elements carbon, hydrogen, and oxygen - which is the principal part of the solid framework of plants. The wooden floors we walk upon, the newspapers and magazines and books we read, corn cobs, cornstalks, wheat straw and other straws -- these and myriad other things are largely cellulose. Chemically, cellulose is very similar in composition to cornstarch and sugars; it contains the same elements and is convertible into sugars by the action of heat and acid.

Cotton is nearly pure cellulose. The chemist already knows how to make rayon and rtificial silks out of cellulose from cotton linters, cornstalks, etc., and industries of great size have sprung up to manufacture them. Who can imagine the future in store for the humble and lowly cornstalk? I have seen a beautifully printed and bound book entitled "Farm Products in Industry," the paper of which was made mainly of cornstalks. I have read farm journals printed on paper the most costly part of which had been replaced by cornstalk pulp. I have handled samples of insulating and building board made of cornstalks, some as porous and light as cork and some almost as hard and dense as iron. Who can say now, in view of the industrial beginnings already made, what part cornstalks, now worth $2 a ton for their potash and $3 as feed, will play in the building construction and heat and cold insulation of the future? Some day our books and daily news may come to us on cornstalk paper.

Not long ago the idea was conceived of manufacturing the bagasse of the sugar-cane mill into insulating board. Today an enormous business stands as a monument to that idea, to the ingenuity of private business, and to the cooperation of the United States Department of Agriculture and the capacity of its scientists. Bagasse is the pulp of the sugar cane left after the extraction of the cane juice. The sugar mills formerly used it as fuel for the mills. Today the bagasse pressed-board industry takes not only all the bagasse it can handily get in our South, but is importing it from Cuba and is also looking for other materials to utilize. Bagasse board has been selling for $100 to $125 a ton, as against the fuel value of the bagasse at the sugar mill, which is about $2 to $3 a ton for the wet material.

In the operations of making boards out of bagasse, cornstalks, straws, etc., the processes are largely mechanical, but in the chemical laboratory, where man plays the game of atoms and ions with nature's secrets, the revelations promise to be intensely interesting. In the chemical field the chemist has made only the barest beginnings in unfolding the mysteries and possibilities of cellulose.

"In the Bureau of Chemistry and Soils of our department in Washington, where a vast amount of valuable work has been done in the utilization of agricultural by-products, there is a small bottle of a brownish cellulose substance called lignin, which was derived from the corn plant. Lignin is one of the principal parts of woody plant tissues. Its chemical nature is not yet clear, but Dr. W. W. Skinner, assistant chief of the chemical and technological research unit of the bureau, says lignin possibly may yield as many products of commercial, chemical, and medical importance as have been yielded by coal-tar, that by-product of the manufacture of coal gas, the study and exploitation of which gave to Germany a preeminent position in the world chemical trade. Our chemists say that lignin may possibly yield even more than coal-tar, itself a vegetable by-product of the carboniferous age. Some of the articles made from coal-tar that are of great commercial importance are aniline dyes, phthalein dyes and other phthaleins, indigo, carbolic acid, creosote, flavoring extracts, and drugs and chemicals of many kinds. The Bureau of Chemistry and Soils has already made dyes from lignin which are more fast than the first aniline dyes made from coal-tar. And the chemist has gone scarcely below the surface in the exploration of lignin. Millions and millions of tons of by-product stalks, cobs, and straws are produced on our farms every year and every ten holds its store of the mysteries of lignin and cellulose - and who knows what else!"-

TWENTY SEVEN YEARS AGO

Twenty-seven years ago, on March 3, a young forester, fresh from Cornell, entered the ranks of employees of the Bureau of Forestry in the General Land Office. Although his hair is now deeply tinged with gray and his foretop has thinned out considerably after a quarter of a century or more of service, R. H. Charlton is as full of vim, vigor, and enthusiasm as ever.

As an inspector in the early days in the West, he faced many difficult situations which, because of the politics involved during that era, could be handled only by a man with a store of moral courage and a goodly stock of common sence. Unmindful of his own comfort and personal welfare, he cleaned up some very bad situations which made not only for efficiency, but established in the minds of the local people the very definite impression that men who used their positions in the Bureau of Forestry to further their political and personal ends had no place in the organization which had set about the task of handling the - then- Forest Reserves.

After several years of creditable performance on the inspection job, this young forester went to California, where for 20 years he successfully managed the destinies of one of the important National Forests of District Five. His Forest was one of the most important in the United States; unique in fact in the character of its problems and in its close relationships to the affairs of the local public. Throughout the years of his administration, he stood out among the leaders of the Supervisors in the California District.

Next, we find him in the Eastern District, where he is attacking the administrative problems with characteristic aggressiveness and with the skilled hand of a good manager.

His bright eyes still snap. His step has lost none of its elasticity. His mind has lost none of its keenness and facility for penetrating the outer shell of things and striking at the heart of affairs. Truly, he has set up an enviable record.

A FIRE MAY NOT BE OVER WHEN IT IS OUT

By E. E. Carter, Washington

The Northfork fire, Sierra Forest, of June 22 to 27, 1924, gave the investigators of the Bureau of Entomology the chance they wanted to follow through the rise and fall of an insect epidemic in fire-scorched western yellow pine timber. The fire covered 5,460 acres in the lower portion of the yellow pine type, with a stand estimated at 19,110 M feet. The fire killed outright 3.2 per cent of the stand by volume. During the remainder of the 1924 season, insects killed an additional 3.5 per cent. It was a year of drought. In 1925, there was an insect loss of 20 per cent (3,698 M) of the remaining stand. In 1926, the volume killed was much smaller, and was less than that killed by insects in 1924. In 1927 and 1928, the infestation was endemic. About four-fifths of the total loss subsequent to the fire was in 1925. The full story is summarized by Mr. J. M. Miller in his report as follows:

"Killed by fire in 1924	3.2%
Killed by insects, after the fire	24.8%
Surviving, in October 1928	72.0%

The western pine beetle was the most important and abundant insect connected with the killing of trees which survived the fire. By volume of trees attacked within the burn it increased 735 per cent in 1924 over 1923; in 1925 the increase was 454 per cent over 1924, the volume killed being 4536 per cent greater than in 1923. In 1926 the volume killed decreased 88 per cent from that of 1925, the 1926 volume being about half that of 1924 but about 4 times as large as that of 1923. In 1927 and 1928 the infestation was endemic on the burn, and except for a few fire-weakened trees that were attacked was quite similar to that which existed on the area before the fire.

The concentration of the western pine beetle on the burn in 1924 and 1925 did not appear to influence the cycle of the infestation on adjoining areas, where the volume killed also increased in 1924 and 1925 and decreased in 1926. However, the volumes of the increase and subsequent decrease on the burn were far in excess of any that occurred on adjoining areas. This indicates that the fire-produced conditions were especially attractive or favorable to the western pine beetle, and persisted for two seasons following the fire.

On the basis of a limited amount of bark surface examined, conditions for brood development of the western pine beetle were found to be unfavorable in the fire-weakened trees especially in those only partially defoliated by the fire.

This indicates that the infestation which builds up on a burn in weakened trees is not of an aggressive character and is short-lived after the supply of susceptible trees becomes exhausted."

SUMMER HOME PERMITTEES

By L. A. Barrett, D. 5.

In going through the files here I had an opportunity to get some figures on recreation uses work that have probably never been secured elswhere. These figures show pretty conclusively that only a relatively small proportion of the people who apply for summer home permits actually inprove the areas and occupy them for a period of years. Since the figures here are believed to be quite similar to what will be found on other Forests in this District they are submitted.

Total number of residence permits issued since 1910	712	100%
Number of the above canceled for failure to build improvements (usually after paying rental for 1 to 4 years)	285	40%
Number of above transferred from one permittee to another (usually through sale of improvements)	132	18½%
Number of above canceled or relinquished because of damage to land by fire or flood	30	4%
Number of permits in effect on April 15, 1929	265	37½

From the above record it appears that we can figure that 2 people out of every 5 who accept a summer home permit will change their minds before they get around to constructing the necessary improvements. This is about the proportion I have observed elsewhere. We can also figure that over a 10 year period of time 1 permit out of every 5 issued will change hands through sale of improvements or through death of the permittee, etc. The figure for permits canceled by reason of fire and flood damage is not typical of the District. It just happens that more of this has occurred on the Cleveland than in all of the rest of the District combined. The figures do show that we can only count on 2 regular customers out of every 5 permits issued. So we do not gain a permittee every time a permit is issued as has been the impression in some quarters.

DAWES ARBORETUM ESTABLISHED

By a deed of trust filed in the Licking County Court House today the Dawes Arboretum, which its founders hope will excel the famous Arnold Arboretum at Boston and the Morton Arboretum at Lisle, Illinois, was formally established. The donors are Beman G. Dawes and his wife, Bertie B. Dawes. The latter is one of the three women in the United States who hold a medal given by Congress for life saving. Mr. Dawes is Chairman of the Board of Directors of the Pure Oil Company and a brother of Charles G. Dawes, Ambassador to England. The trust deed conveys acres of land in the very foothills of the Allegheny Mountains.

The formal purposes as set forth in the original deed of trust are:

"To encourage the planting of forest and ornamental trees and to demonstrate the value of the different varieties of trees for these purposes; for practical and scientific research in horticulture but particularly in the growth and culture of trees and shrubs able to support the climate of the State of Ohio, and to increase the general knowledge and love of trees and shrubs and bring about an increase and improvement in their growth and culture."

The first trustees are to be Mr. and Mrs Dawes, their five children and two personal associates, former Representative Edmund L. Taylor, Jr., of Columbus, and Edwin C. Wright of Newark. After the death of Mr. and Mrs. Dawes they are to be succeeded by the president of Ohio State University and the president of the Ohio Archaeological and Historical Society

General Dawes has planted a tree to represent the world of finance, the business side of the American Expeditionary Force, the Dawes-Young Reparations Commission and the Diplomatic Service, Baseball is represented by a tree planted by Ban B. Johnson, former president of the American League. Radio is represented by a tree planted by James G. Harbord, president of the Radio Corporation of America.

From a forestry standpoint, the tract represents many different kinds of soil - upland, lowland, marsh land, fertile valleys and shale hills. More than 100 native varieties and species have been identified in the native woodlands. Present plantings have increased the number of different specimens to more than 500, and, counting tiny seedlings, the number is in excess of 800. Ultimately it is planned to have in the arboretum every species of tree that grows in the Temperate Zone.

It has been established that there are native trees more than 500 years old in the tract. These include white oaks and gigantic hard or sugar maples. Mr. Dawes began five years ago a systematic effort to replace the maples now coming to old age by transplanting saplings thirty to forty feet in height.

Mr. Dawes has dedicated a parcel of land to the Ohio Forestry Department in cooperation with State Forester Edmund H. Secrest. - Excerpts from New York Times, June 16, 1929.

FOREST SCHOOL STUDENTS

By Carl Ewing, Malheur

Every Forest is interested in the forest school student and in his record as a summer employee. The following D-6 statistics have been prepared:

School	Nos. Employed
Oregon State College	51
University of Washington	34
Washington State College	15
New York State	5
Minnesota	7
Michigan State College	4
Michigan University	3
Iowa	8
Idaho	2
Cornell	4
Montana	1
Georgia Tech	1
Total	135

Jobs Held	
Lookout -Fireman	38
Forest Guard	17
Fireman	20
Laborer (R&T)	30
Timber Surveys	23
Pacific NW. Forest Experiment Station	4
Miscellaneous	3
	135

Forty-six per cent of these men were entirely satisfactory, 42 per cent more may be re-employed in some capacity and 12 per cent are not to be employed again.

In attaining the total of 135 students who were actually employed, 37 were hired upon requisition and 105 were hired without requisition. The latter number includes 27 men employed by the Pacific Northwest Forest Experiment Station and by the District Office for timber survey work; 44 were men who had worked in previous years.

This is a record of which the forest schools need not be ashamed for it is better than the showing made by other men in similar positions. And in addition, some of the boys who were reported unsatisfactory were no doubt handicapped more or less temporarily by physical or other deficiencies which may be relieved or removed.

In 1925, out of 78 students, 92 per cent were satisfactory. In 1926, only 10 per cent of the 92 employed were failures and in 1927, 88 per cent made good out of a total of 111.

clusively that only a relatively small proportion of the people who apply for summer home permits actually improve the areas and occupy them for a period of years. Since the figures here are believed to be quite similar to what will be found on other Forests in this District they are submitted.

Total number of residence permits issued since 1910	712	100%
Number of the above canceled for failure to build improvements (usually after paying rental for 1 to 4 years)	285	40%
Number of above transferred from one permittee to another (usually through sale of improvements)	132	18½%
Number of above canceled or relinquished because of damage to land by fire or flood	30	4%
Number of permits in effect on April 15, 1929	265	37½

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VEGETATIVE ZONES ON NAVAJO MOUNTAIN

By G. A. Pearson, Southwestern For. Exp. Sta.

Navajo Mountain lies on the Utah-Arizona State line some 160 miles northeast of Flagstaff, Arizona. It is located in one of the most arid sections of the country. The scanty weather records in this region indicate that only about one-half the amount of precipitation occurs here that is normal for the same elevations on the Colorado plateau and the plains of south-central Arizona.

During a recent climb of Navajo Mountain it was discovered that vegetative zones there were from 1000 - 2000 feet higher than in the regions farther south. For example, the pinon-juniper type was present at elevations from between 6500 and 8500 feet; the western yellow pine type between 8500 and 9500 feet; the Douglas fir between 9500 and 10,000 feet; and the Englemann spruce type extends from 10,000 feet to the summit at 10,400 feet. All of the stands in the types mentioned are poorly developed and of slow growth.

The movement of the zones upward is undoubtedly a result of the necessity for meeting the minimum moisture requirements of the species concerned. The condition of the stands indicates that the trees are existing in habitats of low temperature, lower than normal, where water consumption may be reduced, although at the expense of growth. It is probably true, due to the aridity of the surrounding country, that the trees find increased moisture at higher elevations than usual, and that this increase, in combination with the reduction in water requirements as the result of decreased temperature, is all that makes their existence possible.

YE EDITOR DISCOVERS

The flood report, which was prepared under the direction of Associate Forester Sherman and transmitted to the President last February, has just been issued as a public document by order of the House Committee on Flood Control. This report is a voluminous document of 740 pages and includes detailed studies of all the important drainage areas in the Mississippi River system.

In transmitting the report to the President, Secretary Jardine said: "The results even when based on acknowledged incomplete and conservative data are of such significance that it does not seem possible that the part the forests play in the control of floods can be longer ignored. Certainly it would seem that any plan of the river control that does not include forestry as an auxiliary measure would overlook an important aid in the control of floods at their source."

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District Forester Show has issued orders that except in established camps, at places of habitation, and in certain high mountain areas in the Sierra Nevada, smoking in the D. 5 Forests will not be permitted until the end of the fire season. Each automobile or pack train party camping in the Forests must be equipped with a shovel and an ax suitable for fire fighting purposes. A camp fire permit must also be secured before building any fires on National Forest land, including fires in stoves burning gasoline, kerosene, or wood.. A number of important watersheds within the Cleveland, San Bernardino, Santa Barbara, and Sierra Forests have already been closed to all public use and travel, except under special permit.

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Several appointments have already been made from the Junior Forester eligible list - three by the Biological Survey and eight by the Forest Experiment Stations. Appointments to the Experiment Stations are: Southern - 3; Allegheny - 1; Lake States - 3; and the Pacific Northwest - 1. One of the men appointed to the Southern Station will be assigned to the study of financial aspects of forestry and the other will be assigned to erosion study. The man appointed to the Pacific Northwest Station will be assigned to timber survey work. The other men will be assigned to silvicultural work.

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Under the terms of a law effective July 1, 1929, the West Virginia Game and Fish Commission will become the West Virginia Game, Fish, and Forestry Commission. The forestry division, headed by the Chief Forester, will be on a parity with the game and fish division headed by the Chief Game Protector.

Professor Harold S. Newins, who has been teaching wood utilization at the Pennsylvania State College, has been appointed Chief Forester. He is a graduate of the School of Forestry at Yale and has been actively engaged in forestry work in Colorado, California, and Pennsylvania. Professor Newins was a member of the Forest Service from 1912-1915, as Assistant Forest Ranger on the Santiam.

GEMS FROM JUNIOR FORESTER EXAMS.

To keep fires out of the woods, logging must be done in the winter.

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A cutting cycle is a system where the cut is regulated over a predetermined period of years. A rotation is a system by which the forest is managed to obtain the cut.

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Increment borings are necessary to determine how long it takes each site to grow from one age class to another.

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Multiply the area per acre by the volume to get the stand.

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Decoyant trees are attacked by Dendroctonus brevicomis in the shape of logs.

- - - - - - - -

Dendroctonus brevicomis is the white pine blister rust. It can be controlled by spraying the trees.

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Cronartium ribicola is a heart rot attacking the southern yellow pines, and lodgepole.

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Dendroctonus brevicomis is the chestnut blight.

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Trees affected by blister rust are the white pine, white oak, and chestnut.

WHATS' THIS

Some interesting results are presented in the District 2 Investigative report on two representative western yellow pine planted plots on the Nebraska National Forest, one grazed and one ungrazed. The grazing has been mainly by horses but some cattle. There was no loss of specimens. both plots showing the same number of plants in 1928 as occurred in 1920 The average height growth in June 1920 was 19.1 inches for the 90 specimens on the plot that has since been grazed and 19.19 inches for the same number of specimens on the ungrazed plot. In September 1928 the average height growth was 57.82 inches and 54.38 inches respectively. Not only was the average height growth nearly 3½ inches greater on the grazed plot for the 9-year period but that plot had a greater annual growth in 6 out of 9 years. Tip moths injured a greater percentage of specimens on the ungrazed plot in each of 6 out of the 9 years and the average annual percentage of specimens injured by tip moths was nearly 4½ per cent greater over the 9-year period. on the ungrazed plot. - W. R. C. (Sure We can even use *controlled* fire in silvicultural practice in some places - F.E.C.)

HEAD MAGGOT IN MULE DEER

By John H. Hatton, D. 2

Unusual and very unfavorable deep snow conditions in the vicinity of the Gunnison Forest During the winter 1928-9, resulted in quite a loss in fawn mule deer - about 60 head mortality having been reported from that one locality. Post mortem examinations showed that head maggots, similar to the trouble which affects domestic sheep was possibly a contributing factor in these losses As with domestic sheep, animals lose appetite, become emaciated and fall easy prey to other adverse factors or conditions like severe weather and feed shortage. Young animals like fawns and lambs seem less able to withstand this trouble than more mature animals.

A natural inference among the local people was that domestic sheep permitted on the National Forest in that locality were responsible for introducing the fly or maggot pest. The Forest Service was thus charged with being the main contributing factor to those unfortunate game losses.

Specimens of the grub or maggot were obtained by the writer from a local citizen and game enthusiast who had posted or autopsied several dead and frozen fawns. Like flies dormant from cold, these maggots would come to life when warmed up although they had been frozen solid in the upper nasal passages of the deer for days and maybe weeks. The specimens secured seemed, on casual inspection, to be different from those which infest sheep. Accordingly, they were turned over to the Zoological Division of the Bureau of Animal Industry for identification. They proved to be not only a different species, but a different genus of fly or maggot and one which, as far as known, does not attack sheep. It was determined as *Cephenomyia sp.* Specific determination was not possible as there are no records of adult flies having been reared from the larvae of the Cephenomyid occurring in our western wild deer.

The head maggot which affects domestic sheep is *Oestrus ovis.*

The first houses constructed were of logs, and the early settlers suffered more inconvenience from a limited supply of nails than from anything else. When a settler established a new building, the old building was destroyed by fire in order to secure the nails, and this custom became so general throughout the colony of Virginia that the following law was passed in 1645:

"It shall not be lawful for any person so deserting his plantation as aforesaid, to burn any necessary housing that are situated thereon, but shall receive so many nails as may be computed by two indifferent men were expended about the building thereof for full satisfaction."

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Forest Service U.S. Department of Agriculture

Service Bulletin

Contents Confidential

Vol. XIII No. 27 Washington, D. C. July 8, 1929

EXECUTIVE MANAGEMENT

By R. Y. Stuart

During the past winter we have put a lot of work, considerable time, and an appreciable sum of money into the discussion course on executive management. I believe we have all enjoyed it and benefited from it. We now need to make sure that we do not file away Mr. Keplinger's lessons and the discussions by fellow officers from all over the United States and allow the ideas we have gained from the course to fade from our minds. We want to translate the hints we have picked up into action which will yield the better public service which will come from a fuller application of the principles we have been studying.

I think we in the Service have all come to recognize clearly the obligation which rests upon each of us to study the application of the principles of executive management to our work. Our individual day-to-day responsibilities will be met more easily as we increase our knowledge and skill in this field, and as we increase our understanding of the subject we will also fit ourselves for higher accomplishment and higher responsibility.

I should like to see the Service reap full benefit from the study which has been put into the course by determining what the course has yielded as a basis for immediate or prospective action by executives. Perhaps this may best be done if each of us systematically makes his own application to his own responsibilities.

I should also like to see that we make full use of suggestions which the course has brought out as to subjects for future study and with regard to our future guidance in the manual or other publications.

The questionnaire which summarized the discussions is a valuable outline of the essential things we need to keep in mind in seeking to better our executive management of the vast resources for which the Forest Service is responsible. Because of the almost unanimous agreement which the questionnaire brought out, it is also valuable as an expression of Service opinion.

A group of men has recently been working at Northfork, California, on the development of our technique in analyzing the Forest Supervisor job. This group, consisting of Messrs. Show, Headley, Loveridge, Keplinger, Deering, Pitchlynn, Merritt, and M. A. Benedict, since it represents three Districts and the Forester's office was asked to act as a Service committee to consider what might be done to follow up the executive management course and reap the most benefit from it. The Committee has submitted a report which I have referred to the District Foresters for their comments and recommendations. The Committee does not recommend any extensive program but takes up a few suggestions developed by the course which it believes should have special consideration. Regardless of what may be done along the line proposed by the committee I hope that each man taking the course will plan and execute his own program of follow-up and application.

NORTHERN PACIFIC LAND GRANTS

By D. F. McGowan, Washington

On June 25, President Hoover signed the Northern Pacific land grant bill that was enacted by Congress during the Special Session, for the purpose of providing a method under which the differences between the Forest Service and the Northern Pacific may be adjudicated in the Courts.

The bill is the culmination of the work of a Joint Committee of Congress that has extended over a period of five years. It grows out of the controversy between the Forest Service and the Northern Pacific Railway Company with respect to approximately 2,800,000 acres of National Forest lands that are within the indemnity limits of the land grants made by Congress to the Northern Pacific Railroad Company under the Act of July 2, 1864, and the Joint Resolution on May 31, 1870, to aid in the construction of a railroad from Lake Superior to Puget Sound.

The Northern Pacific has contended that it has the right to select these National Forest lands in satisfaction of the acreage of its land grants. The Forest Service has contended that the Northern Pacific is not entitled to these lands because it has not complied with the provisions of the granting acts and because the acreage of the grants under a proper construction of terms thereof has been satisfied in full.

The Forest Service pointed out to the Joint Committee that in the land grants there were obligations upon the Northern Pacific that had been broken and that there had been fraud and collusion in connection with the activities of the Northern Pacific under the grants.

The Forest Service urged that title to these indemnity lands should be retained in the United States, even though it should be necessary to compensate the Northern Pacific.

The bill as enacted has three major purposes: First, it removes from the operation of the Northern Pacific land grants the National Forest lands that have been involved in the controversy, providing in this connection that the Northern Pacific shall be entitled to compensation for the lands if and to the extent the Courts hold that compensation is due; second, it declares a forfeiture of the unsatisfied indemnity selection rights of the Northern Pacific, and third, it provides for the institution of Court proceedings to determine the disputed questions of law and fact that were considered by the Joint Committee.

The bill saves the National Forest lands to the United States. The compensation, if any, the Northern Pacific will receive for the lands will be dependent upon the attitude of the Courts with respect to the forfeiture clause, the breaches of the terms of the land grant by the Company, and a consideration of the acreages which have been erroneously credited to the Northern Pacific.

In addition to saving the National Forest lands the bill should go a long way toward a final adjustment of the Northern Pacific land grants which have been pending since July 2, 1864.

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One outstanding aspect of the Northern Pacific Land Grants case not mentioned by McGowan is his own monumental and effective work in handling it for the Forest Service. For 7 years he has devoted his almost constant attention to the intricate details and to the forwarding of this case, which is of such large importance to National Forest integrity and the broad public interest. McGowan has done a notable piece of public service, frequently under discouragements that would overwhelm a less courageous soul, and always inconspicuously. The Forest Service is proud of him and of his achievement.- R. Y. Stuart

PROGRESS IN TRAPPING DEER

By R. R. Hill, Washington

The Wisconsin Conservation Commission has recently reported developments in methods of trapping deer which promise to make this a very effective measure in game conservation. The new principle consists of trapping the deer in their shipping crates in much the same manner rabbits have been trapped for many years in the familiar box traps.

The Wisconsin deer trap is a wooden box 54 inches long, 42 inches high, and 24 inches wide, with a drop door in front released by a trigger attached to a raised treadle in the back end of the trap. The trap is padded on the inside with hay covered by canvas. It has a wood framework, a dark interior, and is collapsible. It weighs approximately 125 pounds and costs about $11. It was developed by combining ideas in use by the Forest Service on the Kaibab Forest and with the advice of Mr. Vernon Bailey, Chief Field Naturalist for the Biological Survey.

The traps are set where deer are accustomed to congregate and are camouflaged with brush, cedar boughs, etc. For bait sliced apples, whole oats, bran, salt, hay, and the twigs of balsam and cedar were used.

The deer captured in the experiments are handled without difficulty, do not injure themselves seriously, readily take food, and are conveniently transported in their traps as crates. This experience is quite different from that usually had with mature deer when captured in larger enclosures.

W. B. Grange, Superintendent of Game for the Wisconsin Conservation Commission, who conducted the experiments with this new deer trap, believes it could be used in conjunction with a larger permanent trap in capturing deer on a fairly large scale. The non-portable trap would consist of an unroofed board room built permanently on a spot frequented by deer. The enclosure ought to be at least 12 feet square and 12 feet high, with one large door 4 feet in width and one or more openings just large enough to fit the door of the small Wisconsin deer trap. The large enclosure would be open at all times of the year, and when it is desired to trap deer small traps would be placed in the small doorways and the large door would be connected with a trigger. The plan would be to trap the deer twice. When they attempted to go from the larger enclosure to the smaller traps they would be captured and these small traps would serve as crates suitable for shipment. This plan, it is stated, is essentially the same as a plan developed by the Cleveland Cliffs Iron Company of Grand Island, Michigan.

Mr. Grange's conclusion is that there is no reason why deer as well as many other native animals or birds cannot be trapped at a reasonable cost, and that by means of trapping it would be feasible to transplant deer from overstocked areas to ranges in need of restocking.

PERHAPS WE IN WASHINGTON ARE TO BLAME

"District Fiscal Agent Lee Stratton is back from about a two months detail to the Washington Office. He actually seems glad to be back." From D-4. - Daily News.

FAMILIARITY AND KNOWLEDGE

By Roy Headley, Washington

In speaking of the new cost accounting system one Supervisor writes, "Surely, I know from present methods whether the time of my men is profitably employed."

Maybe he does, but I wonder. I wonder how many of us are even entitled to feel cocky about our knowledge of the work of the man he is most familiar with - himself.

Have you ever tried keeping records which would enable you to analyze you own work? If so did you get a hard jolt or two? Personally, I admit nothing, as Eldridge was wont to say; but speaking merely in the abstract I venture the opinion that the most familiar work looks different when it has been well analyzed and particularly when it has been viewed from the standpoint of cost.

No doubt the Supervisor quoted has made diary analysis and has his men following work plans which are followed up. Much of the control we exercise over the work of ourselves and our people must be exercised through the medium of time control. But time control needs to be guided and checked by consideration of cost in money.

Anything as difficult as the intelligent control of the work of human beings needs to be approached in as many ways as possible. And one of the possible approaches is through costs.

It is true that we now have expenditure records which we call our costs. They are useful and used - more or less. During the past winter one District Forester, led his Supervisors and Rangers to wonder if they knew as much as they thought they did about the profitableness of their work and he did this by asking them questions based on existing expenditure records.

But our present "costs" only go part way. Before we know all we need to know about the relation between accomplishments of ourselves and our people and what those accomplishments cost; we need to take account of investments, depreciation, and a lot of other things which we can not get at now but which we can deal with as rapidly or as slowly as we wish after we get the new cost accounting system under way.

BACKGROUND

By F. V. Horton, Columbia

I am sometimes suprised at the primitiveness of my emotions. For example. I am irritated when people do not understand me. Probably the Cro-Magnon or Neanderthal man bounced a convenient rock off the slanting dome of his hirsute neighbor because the neighbor encroached on a favorite hunting ground whose boundaries had been described in detail. When Cro-Magnon No. 1 described his hunting ground to C. M. No. 2 it was clear to No. 1 and he thought it clear to No. 2. Now No. 2 doubtless thought he had it all straight but the knot which grew on his retreating brow bore witness that some one somehow misunderstood.

So since man was man he has not ceased to struggle against the inadequacy of speech as a method of thought transference. And he has never ceased to be irritated when he was misunderstood.

With myself, since civilization has denied me the Cro-Magnon prerogative of hurling rocks, I must, perforce, resort to more subtle methods. In my younger days with the egotism of the youthful, I was convinced that a lack of understanding in others was proof positive of low grade brains. Now as I go along I am somewhat chagrined to find that so many times it is my own self that is at fault. No matter how clear the thought is in the mind of the thinker, it comes to naught if the speech meant to convey it is faulty. It appears that all of us interpret what we hear wholly in terms of our own background.

In our Forest Service work - particularly in personnel and public relations - how much more smoothly, and how much more efficiently things would run if we could always be understood as we think, not as others think we think. Now being a lover of peace and quiet, I am striving always to make my meanings clear and on the other hand I try sincerely to understand. To make any headway in this I find that before I can hope to be understood I must speak in terms which are not liable to misinterpretation. If for example, I am talking to a logger on the Pacific slope and use the word bridle there comes to his mind a rig made of steel cable and used in the logging woods. Again, if I use this same word to a "cow poke" in eastern Oregon there immediately comes into his mind the steering gear of his cayuse. If I should use this word to a sailor he would think of a rig used to tow a ship. And lastly, if by any stretch of imagination I should use this word in a group of sub-debs the probabilities are that through their minds would run the strains of the wedding march. Each person interprets according to his background - all are right and yet it may be that the one wishing to convey an idea has failed entirely.

Perhaps unconsciously we all do not attempt to get our hearer's background, but would it not make the machine function more smoothly if we made a conscious and constant effort first to get the other fellow's background and then translate our ideas into the language of that background?

A FLASH ON WOOD PRESERVATION

In view of the widespread interest which has been shown regarding the possibilities of smelter dust treatment of telephone poles and fence posts the following extracts from a letter from the Madison Laboratory are being quoted:

"The essential constituent of the dust is arsenic trioxide which constitutes about 70 to 80 per cent of the total material.

"****The indications we have thus far seen or which have been reported to us are in general favorable although one case has been reported to us in which poles treated with the Anaconda Wood Preservative began to fail within a year, apparently because the ground was too dry and the arsenic did not distribute itself through the wood promptly enough to head off decay.

"Without attempting to account for it in a scientific manner we can say from observation that the arsenic does travel in the wood when used in the manner recommended by the Anaconda people for protecting poles and posts. Some of the arsenic is dissolved in the ground moisture and it can pass either by diffusion or by direct absorption of the solution into the wood. We have seen cases where the arsenic has climbed up the pole or post for a distance of a foot or more above the ground line although the arsenic in the ground may be a foot or more below the ground level. Cases have been reported to us and we have no reason to doubt them where the arsenic has climbed as high as 20 to 30 feet. We feel certain that the passage of the chemical in a radial direction toward the center of the post or pole will be much slower than its passage in a longitudinal direction. If the wood is sound when treated, however, the arsenic should be able to pass into it rapidly enough to head off the fungus. On the other hand if the wood is already infected with decay to an appreciable depth it is quite possible that the arsenic will not enter fast enough to kill the fungus. In the latest discussion we had on this point with representatives of the Anaconda Copper Company they admitted that they did not consider the treatment satisfactory when applied around posts or poles already partially decayed unless all of the decayed material was first removed and thrown away."

AMENDMENTS TO THE STATE FIRE LAWS

By J. H. Price, D. 5

The State Forester's office informs us that Assembly Bill 105 has been signed by the Governor. This bill amends section 384 of the Penal Code and makes unlawful "lighting, maintaining or using a camp fire upon any brush, grass or forest covered land which is the property of another between May 1 and October 31 of any year without first obtaining a written permit from the owner, lessee or agent thereof, unless he possesses a written camp fire permit duly issued by or under the authority of the United States forestry service for use in a territory under the jurisdiction of said United States forest service adjacent to said property of another and is fully complying with all the rules and regulations of the United States forestry service."

The hazardous fire area bill (Senate No. 252) has also been approved. It provides that upon written petition of the owners or authorized agents of more than 50 per cent of the land, including public land, within the exterior boundaries of any area of not less than 10,000 acres in size, upon which a fire hazard exists due to the presence of inflammable material, the State Board of Forestry may designate such area a "hazardous fire area." It shall be unlawful to smoke or to build a camp fire or bonfire on such an area except at camp sites designated by the Board. The law provides that camp sites shall not be designated without the consent of the owners of the land upon which they are located and it also provides that no regulation shall interfere with the use and occupation of any land by the owner or his agent. Hazardous fire areas must be posted every third of a mile along the boundaries or at similar intervals along all roads and trails through the areas. The act as passed also provides that it is unlawful to smoke on National Forest land and to build camp fires on National Forest land without a permit and the fire-fighting tools called for in the permit, except at such time and places permitted by Federal regulation. This section of the act however, is probably inoperative, due to faulty wording of the title of the law, and should be disregarded for the present. The amendment to the Penal Code, however, described above, covers camp fire permit enforcement, and smoking regulation on Federal lands can be enforced in State Courts when they are included in "hazard fire areas." -

From D. 5 Bulletin

YE EDITOR DISCOVERS

From time to time members of the Washington office have been going to WRC's broadcasting studio to tell the world, in seven minute talks, what they should know about forestry. These programs were broadcast on time granted the Department through the courtesy of the National Broadcasting Company, and were put on the air over a network of 17 stations. It is estimated that their daily audience was about half a million. After July 8 this noon-hour network will be extended to take in 31 stations, with a potential audience estimated at 3 to 4 million listeners. Forest officers who go on the air in this series of programs in the future will thus be talking to a much wider field.

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Kittredge of the Lake States Experiment Station is in Washington getting ready for his trip to Sweden, where he will attend the International Congress of Forest Experiment Stations.

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After an absence of several months, Reineke of the Office of Forest Measurements has returned to Washington. Reineke spent the winter and spring at the Cornell Forest School, taking advance work in forestry.

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THE LAST FRONTIER

Of more than passing interest is the announcement made by the United States forest service that California is to have within her boundaries fourteen "forests primeval" with a combined area of more than 1,500,000 acres. Included in this area are large tracts in the San Jacinto mountain section and on the higher slopes of Mount San Gorgonio.

These huge tracts, according to the announcement, are to be maintained as virgin territory, free from roads, and closed to any form of recreational occupancy under permit. They are our "last frontier," and in their primitive wilderness will be preserved for all time, free of development for the enjoyment of the people.

With what quickened heartbeats would not some of our earliest pioneers greet this news--Joaquin Miller, for instance!

Many of our Argonauts viewed the passing of the old California with a pang. "Development" was anathema to them. "Nothing ever happened so disastrous to the Pacific states," wrote Miller in his "Memorie and Rime," "than the building of the Pacific railroad . . . The isolation of this country, the valor, the virtues, and the unusual wealth of the people--all these gave it an elevation and splendor that no land in so short a time ever attained . . . But all this because neutralized, passed away and perished when men came and went to and from the Pacific states."

Our viewpoint today is decidedly different!

But nevertheless we "moderns" can Hail with acclaim the setting aside of this "last frontier" which shall forever remain "unspoiled."--Riverside Press.

BONNER BECOMES EXECUTIVE SECRETARY OF FEDERAL POWER COMMISSION

Mr. Merrill having decided to resign his position as Executive Secretary of the Federal Power Commission in order to accept more attractive employment elswhere, it became necessary to select a successor. Naturally under such conditions the Forest Service personnel was considered. It was decided that Frank Bonner, now District Engineer of the Forest Service at San Francisco, was the best qualified man. No one who knows him will question at all that a proper decision was made.

Frank entered the Forest Service as a draftsman in May 1909. His personnel card shows that he was rapidly promoted, both in salary and responsibilities. Through the minor engineering positions he rose to have charge of the Mapping and Surveying work in Missoula. Then he came to Washington as Assistant to the Chief Engineer. During the War he rendered valuable assistance while detailed to the Madison Laboratory. Following that he returned to Washington and remained here until 1922 when a detail to the San Francisco office resulted in his accepting the position of District Engineer. While at San Francisco, Frank has carried on his work most satisfactorily and has brought commendation not only on himself but also on the Forest Service.

Frank receives a very decided advancement in salary and for this, all who know him are very glad. He is worth all that is given him. His responsibilities will be greatly increased. Everyone in the Forest Service who has to do with the water power work will do what they can to help him carry out his new work. - T. W. N.

CONSERVATION GRAZING BEST

A study of the effect of various systems of grazing has been carried on for the past seven years on the Santa Rita Range Reserves. The systems used were:

1. Grazed summer and fall and protected remainder of year
2. Grazed fall and winter and protected remainder of year
3. Grazed late in spring only
4. Grazed heavily yearlong
5. Grazed conservatively yearlong

The area under conservative yearlong grazing maintained the highest average density, although the density was less on this area at the start than on any of the others. After seven years' use the density on this area had made a 17 per cent gain, while on all the other areas it had lost from 24 per cent to 35 per cent, the latter being on the area grazed heavily yearlong.

This study so far indicates that there is a decided advantage in favor of conservative yearlong grazing on normal ranges. It shows also that deterioration is very rapid on overstocked ranges. The study was based on areas which were in a normal state of productivity. On depleted ranges deferred use has been shown to be more effective in aiding recuperation.

This study emphasises anew the two more important fundamentals of range management, conservative numbers and proper distribution. - District 3

JOHN DAY VALLEY ONCE A HEAVILY FORESTED REGION

By John D. Guthrie, D. 6

Herbert L. Mason in a Carnegie Institution publication ("Fossil Records of Some Western American Conifers", Publ. No. 346, pp. 139 - 158, 1927) gives interesting details of some fossils of our conifers in Oregon and where found.

For example: Eagle Creek - Ginkgo, Pinus Knowltoni.
Near Clarnos Ferry, Ore., are fossils of Pinus torreyana,
Sequoia langsdorfii.
Near Dayville, Ore. Ginkgo, Taxus, Torreya, Abies Chaneyi,
Abies Shastensis, Sequoia langsdorfii.
Near Tipton, Ore. Picea, Taxodium nevadensis, Libocedrus
decurrens, Thuja gormani

Several of the above species are now extinct, and are really fossil species only.

This publication has several very striking illustrations of some of the above fossilized conifers.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people*** Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

Vol. XIII. No. 28 Washington, D. C. July 15, 1929

WHAT PRICE FOREST FIRE?

By A. G. Jackson, Siskiyou

The Great Northern Railroad Company has recently completed an eight mile tunnel through the Cascade Range from Scenic, on the Snoqualimie National Forest to Berne, Washington, on the Wenatchee National Forest, in a supreme effort to get away from the danger and expense of running their trains up to Stevens Pass and through the range by the old Cascade tunnel which is 2.7 miles long.

Crossing the Cascades is a serious matter recognized by all the railroad companies whose lines pass that way. The Great Northern, as its name suggests, is the northern-most of the lines and has probably had the most grief from storms, flood, snow, avalanche, and fire. At first their rails were laid over the top of the divide gaining the summit by a series of switchbacks. Then the Cascade Tunnel was completed, giving the railroad an 800 foot lower passage through the mountains. Every winter came a titanic struggle with the elements to keep the line open. Railroading "over the hump" took its annual toll of equipment and lives. In summer fires ran uncontrolled over the mountain sides from time to time until finally the steep slopes formerly protected by forest growth became bare and desolate. Thus the stage was set for the snow slides and avalanches that became more and more frequent and destructive, as the timber which formerly held the snow drifts in place disappeared. Then eighteen years ago came a winter that levied an extraordinary tax, taking two passenger trains and nearly 100 lives at one stroke.

The costs of mountain railroading jumped upward to pay for many thousand feet of snow sheds of concrete and timber, timber brought from a distance because the nearby timber had been burned up in forest fires. The winter battle continued until finally, weary and spent in the hopeless struggle, the company has spent $15.000,000 putting through an eight mile tunnel to cut out the part of the old route where most of their trouble occurred.

If the pioneer railroad engineers could go over the route now and see in place of the great expanse of unbroken virgin forest, the miles and miles of desolation left by forest fires, most of which originated from some phase of railroad construction or operation, they would be grateful for the memory of the rugged region in its virgin state — and perhaps they would wonder if they were not partially responsible for opening it to destruction at the hand of man.

Although for thirty-five years, man, empire-building and progressive, has occupied this region, ruthless destruction is more apparent than constructive development for a stretch of 50 miles on both sides of Stevens Pass.

The first engineer to visit this part of the Cascades found the forces of nature maintaining a nice balance in the continuous process of growth, development, and decay. In winter the forest cover held the snow safely in place on the steep slopes. In spring and fall the forest with its duff-strewn floor broke the force of the rainfall and protected the soil from rapid erosion, while in midsummer, period of dry heat, the same forest provided shade and conserved the moisture essential for the maintenance of life in the minor shrubs and plants. Wild life was abundant in the mountains. Deer, bear, wolves, mountain goat, big cats, and birds were plentiful. The streams were well stocked with fish. Timber, grown and ready for man's use, covered the hillsides. Rivers full of power hurried down the valleys. Came then man, the "empire builder," rudely disturbing the fine balance of nature to carry out his puny purposes. Fire scars began to appear wherever man carried on his operations of locating, building, and operating his railroad through the magnificent forest of the Cascades. These scars became larger from year to year as fire after fire was permitted to escape from the control of men and run amuck through the woods. About all the interest the empire builders took in these fires was to keep them out of their camps and other works, a job that became increasingly difficult as the burned area became larger, giving fire once started a better chance to gain rapid headway. After a time, where once had been unbroken forest, the mountain sides became unbroken burns, great reaches of desolate snags and rocks.

But this is only part of the story. Gravity, thwarted heretofore by the forest cover, now began to take advantage of the wide open spaces left by the fires and brought down mighty avalanches of snow, ice, soil, and rock-material that had formerly been pinned in place by sturdy tree trunks. Irresistibly these great slides swept down the mountain sides, grinding and destroying everything in their path.

When two passenger trains, with their load of human freight, were caught at Wellington in 1911 and scrambled into a hash of wood, steel, and human flesh, a sense of horror pierced to the very vitals of the traveling public and their friends. The railroad company was willing to look upon the catastrophe as an "act of God," but there were those who knew that the chain of causes led back to man's interference with nature's balance when he permitted fire to uncover the mountains and thus open the way for continued destruction by the elements.

Some day, man, who has already begun to learn the value of cooperation with his fellows, will discover that the way to progress in development of any region lies not in waging a destructive warfare with nature, but rather in respecting nature's inexorable laws and working in cooperation with her.

In the past thirty-five years, the empire builders have wrought more destruction in the Cascades than nature can replace in centuries. The experience should be worth something. Will the empire builders make advantageous use of it?

What did we find in the Stevens Pass region for twenty-five miles on each side of the summit just before the new tunnel was opened? Snow sheds erected at the cost of millions of dollars. Yearly maintenance of grade, bridge, and track, excessively large; annual destruction of property and life, chiefly because it appeared easier and cheaper to let the fires burn in the earlier days, when they might have been controlled. Hundreds of millions of feet of the finest construction timber in the world turned to smoke and ashes when it might have been saved for the use of man and provided a constant source of freight to be hauled as lumber over the railroad which under existing conditions might as well have traversed a desert as far as local freight traffic was concerned. And now the railway company has spent fifteen million dollars more for a new tunnel.

ACCURACY IN COST RECORDS

By Roy Headley, Washington

In the discussions and correspondence of the past year and a half the point has been made repeatedly that lack of accuracy destroys much of the value of cost records and that accuracy in Forest Service cost records is especially hard to get.

This is both true and important. It is something we ought to think about. Accuracy in our cost records must rest on two foundations - accuracy or soundness of the theories and principles employed and accuracy in the original distribution of time and expense charges.

It isn't a job for any one man or office to build either one of these foundations. We have accountants and economists who are well schooled in the established theories and principles of their professions but to a considerable extent we have got to break new ground in our cost accounting and it is a job for the whole organization. It's one of those cases where we can only find the right theories and principles by testing and thinking and matching ideas until we evolve conclusions to which a majority of us subscribe.

And as for the original distribution of time and expense incident to our work, there is no substitute for informed and thoughtful conclusions by a large and scattered body of men. We can not use factory or laboratory methods of getting accuracy in our original charges. Every man must recognize that he has a contribution to make to the accuracy of the whole of the original charges. If he learns the right way to distribute his time in each detail and does it with unfailing care the aggregate result will be something of which the Service can be proud.

HOW THE SERVICE USES LANTERN SLIDES

By Beryl Gardner, Washington

Although visual education aids are many, the demand for lantern slides continues to grow. So far as the Forest Service is concerned, lantern slides have been found very important in getting over to the public generally, to forest users, and to young people of school age, a knowledge of what forestry is, an appreciation of what the forestry situation is in the United States today, and in awakening an intelligent interest in and enthusiasm for a sound forestry program.

During the year 1928 reports show that the Districts and the Washington office distributed slides to every State in the Union, except Rhode Island, North Dakota, and Louisiana, and to Hawaii.

An attempt was made during 1928 to keep a record of the number of people who saw Forest Service slides, and while records like this never tell the whole story, the one made for last year is encouraging. Only one District failed to send in a record of the use made of lantern slides, one kept account of the meetings at which slides were shown, but not of the number of people present at the meetings, and District 8 reported that no slides had been used during the year. Reports indicate that the five other Districts and the Washington office showed slides to an audience of nearly 330,600 people, a figure which is, of course, only approximate, as borrowers of slides do not always make complete reports.

In the Districts most of the slides were used in connection with talks given by Forest officers; while the greatest use of the Washington collection was made by the public. The slides loaned from the Washington office were shown to approximately 90,000 people, mostly public school children of high school age, including pupils in agricultural high schools.

District 6 reported showings to 56,579 people, of which 51,474 made up audiences addressed by Forest officers in the Districts. The public borrowed slides from the District and made the other showings.

District 5 made a report of showings, mostly by Forest officers, to a few more than 21,000 people during 1928, and then noted the fact that during the past three years slides loaned to a well known San Francisco conservationist had been shown to approximately 250,000 people. By assuming that one-third of these people saw the slides during 1928, District 5's report is raised to a total of about 104,000 people reached through this medium.

Almost two-thirds of District 2's large audience of more than 27,000 people were reached by Forest officers, although a large number of schools made use of slide material belonging to the District.

An interesting and colorful report came in from District 3, describing audiences which varied from 1000 persons brought together under the auspices of the Conservation Division of the New York State Federation of Women's Clubs in Wanamaker's Auditorium, New York City, to a "Mexican audience" of 150 in Willard, N. Mex., which listened to a talk on grazing. One audience, where the fire problem was discussed, was "largely Mexican;" two others were made up of Indian boys and girls, who were very much interested in seeing pictures of familiar places; and a group of patients at Fort Stanton "seemed to enjoy" the program "immensely." In addition, a large number of school pupils and public audiences were reached in the forest-educational campaign. Altogether, about 13,000 people heard illustrated talks on forest problems given by District 3's Forest officers.

District 1 has worked out a comprehensive scheme by means of which in the course of six years, every community of Forest users will have an illustrated talk on each important line of National Forest work, as well as a number of illustrated talks on general forestry and related topics. During 1928, 45 members of District 1, many of whom were Rangers, gave lantern slide talks to a total of nearly 19,200 people. Beside this, 230 students at the University of Idaho Forest School benefited by the use of slides borrowed from the District. The Washington office also sent slides to the Forest School at Moscow during the year.

District 1 submitted with its report a copy of a form letter which District Forester Fred Morrell sent to his Supervisors on August 10, 1928, from which the following is quoted:

"I want to say emphatically that it was not the purpose in making this analysis to secure a quantitative comparison of the educational work -----. A great deal of time, thought, and expense have been put into the preparation of this sort of material and in providing the equipment to go with it -----. It is easier to do this (make a comparison) on a quantitative than on a qualitative basis; however, the stress should always be on the effectiveness of educational work measured in terms of interest and cooperation from the public. Out of that sort of interest come fewer man-caused fires and better results all around."

ED. BURKHOLDER TRANSFERS

Ed. Burkholder, who has been in the Service since December 7, 1913, as a printing expert, left the Forest Service June 30 by transfer to the Division of Publications of the Department of Commerce. "Burk" will be missed by everyone in the Service, since his work kept him in contact with all branches and offices. He will be missed also because of his genial disposition and his fine spirit of cooperation. His friends in the branch of P.R. presented him with a handsome gold wrist watch, on his last day with us. The Department of Commerce is to be congratulated.

OLD SNAKE BITE REMEDIES DECLARED USELESS

After communication with the Surgeon General, Public Health Service, regarding the value of permanganate of potassium and antivenin as first aids in the treatment of snake bite, the Forester has issued the following: "It is evident that permanganate of potash is of no value in treatment of bites of rattlesnakes. In fact, the article to which the Surgeon General referred very definitely stated that not only did it fail to have any effect on the poison in the man's system, but through certain chemical reactions it actually caused the flesh to slough away and created an additional wound or sore which in many instances had proved somewhat difficult to heal. First they knocked out whiskey, and now permanganate of potash, leaving us without any handy remedy, because as I understand it, antivenin must be secured at certain definite points throughout the United States and used within a reasonable time...." As to antivenin, the Surgeon General states "there is experimental evidence that it is of value - just how much value under clinical conditions one could not say," but the great difficulty with this remedy would seem to be the fact that it must be kept on ice or at least at low temperature. - D. 3 Bulletin

HOW SAN DIEGO USES ITS MUNICIPAL RESERVOIRS

In 1928 the Water Department of the city of San Diego collected $72,000 from the hunters and fishermen who used the Morena, Barrett, Otay, and Hodges reservoirs for recreation. These reservoirs are the main source of storage of the domestic water supply for a city of over 150,000 people. Instead of erecting a high board fence around the watershed as some municipalities do or want to do, the city Water Department encourages the use of these artificial lakes; maintains public camp grounds near them; and cooperates in the work of planting these waters with fish annually. The charge per day for the privilege of hunting or fishing on a reservoir is 50¢, while the rental of a boat for a day is $1.00. This puts the sport practically within the reach of every resident of the city. Similar receipts last year at Sweetwater reservoir, a privately owned domestic supply, paid the caretaker's salary and showed a profit of $6,000. Two of the five reservoirs mentioned are within the Cleveland National Forest and all get their water supply from National Forest Watersheds. - L. A. Barrett, D. 5

FRANKLIN'S DOLLARS WILL BE MILLIONS

What compound interest will do to a dollar is shown by the following.

In 1791 Benjamin Franklin bequeathed $5,000 to the commonwealth of Massachusetts and the city of Boston with the provision that it should be put out at five per cent interest for a hundred years. He further stipulated that at the end of that period, 31-131 of the fund accumulated should be again put out at the same interest for another hundred years. At the end of the second period, one-fourth of the total fund is to be given to Boston and three-fourths to the State of Massachusetts.

At the end of the first hundred years, the original $5,000 had become $431,383.62. As provided in the will, $102,083.14 was reinvested.

The last figure we saw stated that this second investment then represented $267,805.15 and had seventy-three years yet to go. At this rate of increase the comparatively small sum given by the first great American teacher of thrift will enable the beneficiaries to divide something over six million dollars in 1991.

Franklin made the bequest to show his gratitude for the action of the State of Massachusetts in making him agent in England. - William Feather, in N. Y. State College of Forestry News Letter for February, 1929.

MORE EARLY FIRE

By E. N. Munns, Washington

Most early data about fires are not specific as to when or where fires occurred. Here and there through the literature of early America, however, are references to specific localities. Thus some of the early travelers told of the places where they lodged for the night, and described areas over which they passed in the morning or in the afternoon where fire was burning or where fire had recently run. By reference to maps it is often possible to locate the spot rather definitely.

Few of the very early records are as detailed and specific as the paper known as "Percy's Discourse." This paper, manifestly taken from a diary, is headed as "Observations gathered out of a Discourse of the Plantation of the Southerne Colonie in Virginia by the English in 1606," and gives the history of the expedition which left London in December, 1606. The extract here given was of a landing made in March the following year:

"The (28th) day we launched our shallop, the Captaine and some Gentlemen went in her, and discovered up the Bay, we found a River on the South side running into the Maine; we entered it and found very shoald water, not for any Boats to swim: We went further into the Bay, and saw a plaine plot of ground where we went on Land, and found the place five mile in compassee, without either Bush or Tree, we saw nothing there but a Cannow, which was made out of the whole tree, which was five and fortie foot long by the Rule ..... Wee marched some three or four miles further into the woods, where we saw great smoakes of fire. Wee marched to those smoakes and found that the Savages had beene there burning downe the grasse, as wee thought either to make their plantation there, or else to give signes to bring their forces together, and so to give us battell. Wee passed through excellent ground full of Flowers of divers kinds and colours, and so goodly trees as I have seene, as cedar, cipresse, and other kindes."

Thus we can locate the fire on the penninsula between the James River and Chesapeake Bay. Probably no modern fire-eater would wish to search for a fire with such directions, or to work up a fire-case against the parties responsible on such evidence as that given. Nothing else is given to indicate that these adventurers knew positively that the Indians were the incendiaries.

CREOSOTING TELEPHONE STUBS

By H. R. Elliott, Malheur

In two years' creosoting telephone stubs at Bear Valley Station, Malheur Forest, we have learned the following:

1. That stubs cut from standing dead lodgepole pine will take the proper penetration and more equal penetration all over the surface treated by not heating the creosote. When heated we found that the bottom of the stub soaked up solid for a foot or more while the middle of the stub was not getting the required inch.

2. That this all-cold-bath method takes a little longer but saves about 1/3 of the creosote for dead-cut lodgepole pine and produces just as good a stub.

3. That western larch (cut from standing dead trees) will not take the creosote. We cooked one tank full of larch stubs for 10 hours, then left them in the creosote for 3 days longer, and they showed only from 1/32 to 1/16 of an inch. How long will larch stubs last with this small amount of penetration? I can't find out. Will some one tell me?

4. That rain or snow water leaking into the tank will not go to the bottom but will stay on top of the creosote and must be dipped or syphoned off.

FISH AND PONDLILIES

The SERVICE BULLETIN for January 14 quotes an exceedingly interesting note by "J. B.T." (Supervisor Taylor of the Deerlodge?) from the D-1 Bulletin on the excessive fondness of domesticated Montana grayling (Thymallus montanus) for the seeds of the big yellow pondlily (Nymphaea polysepala). This note calls to mind the regrettable and surprising dearth of information we have on the food values of National Forest aquatic plants, in view of the enormous amount of plant collection and annotation that we have conducted for the last twenty years or so. Doubtless our outstanding Service authority on fish plants is Brother S. B. Locke of District 4 and it is hoped he will be led to comment on Supervisor Taylor's (?) findings.

The rootstocks and tubers of the yellow pondlily are, of course, a favorite food of deer and moose. Do Messrs. Taylor and Locke also know whether or not grayling or other food fishes will eat the roots and the mucilaginous part of the berries (yes, those leathery big-seeded fruits are berries!) of the pondlily? I presume Supervisor Taylor has tried eating these pondlily seeds either raw or roasted; they are as good as chestnuts when roasted and really not bad when raw, and, of course, have been a favorite food among the Indians always. Mr. Taylor intimates that fish may perhaps disseminate the seed of the yellow pondlily. That suggests other questions. Do these seeds pass through the alimentary tract of the fish in a viable condition or are they not broken down and digested in transit? I would suspect the latter, since the leathery integument is not very hard, the fish would gain nothing unless the starchy endosperm were available for digestion and, if digested, there would be no germination. If the seeds are actually passed from the digestive tract in a viable state are they subsequently utilized by other animals and, if so, are they able to digest them? It is a common sight, for example, in the city of Washington to see starlings and other small birds devour cherries, chokecherries, juniper berries and the like, utilizing the fleshy outer covering and then ejecting the (to them) indigestible "pits;" then along come pigeons and other larger birds, with more powerful digestive apparatus, and swallow these "pits," breaking down the bony covering in their gizzards and utilizing the nutlike seeds within. Is it conceivable that some such community of effort may occasionally arise among aquatic animals in digesting the fruits of plants? - Daytonius

"TALKIES" TO BE MADE BY DEPARTMENT OF AGRICULTURE

Production of talking movies will be begun by the Department during the current season, and, if present plans are carried out, one or more "all talkie" short features will be ready for presentation at the big livestock shows next winter.

For the present the production of talking films will be limited to short specials for such occasions as the National Dairy Show, where facilities for reproduction can be provided, but as soon as portable equipment for sound pictures is available at a reasonable cost production of talking films for general circulation will be undertaken.

Officials of the Bureau of Agricultural Economics of the Department see a special advantage in vocalizing films dealing with economic phases of farming. They believe that the exhibition of sound pictures on the agricultural outlook, for example, would aid greatly in their efforts to induce farmers to study prospective demand for their products in adjusting production activities.

THE ADVANTAGE OF PERMANENT QUADRATS IN RANGE STUDY

In going over thirteen years of Jornada quadrat data from 1915 to 1928, inclusive, the following outstanding facts were disclosed:

1. The quadrat charts and notes are the actual measurements of vegetation of representative areas of the range.

2. By the use of these quadrats and charts, one is enabled to make a very accurate comparison of the vegetation between the different years or series of years, as to density, vegetative composition, and vigor of the plants.

3. By taking the records of actual use by stock and the precipitation records in connection with the quadrat data and compiling them in the form of a graph, gives one a well defined picture of what has actually happened over a period of years. These data should be invaluable in the preparation of G-Management Plans since they represent actual measurements as opposed to (Guesstimates), or ocular estimates. - District 3.

THE WICHITA LONGHORNS

The longhorn cattle placed on the Wichita Forest in August 1927, are proving of increasing interest. In the first place they thrive in this environment even better than the native domestic cattle.

The herd, at the close of 1928, after all losses, consisted of the following:

Cows	18	
Bulls	4	(2 old, 1 long yearling, and 1 1928 calf)
Steers	3	(bought for exhibition)
1927 yearlings	4	(2 heifers and 2 steers)
1928 calves	11	(5 steers and 6 heifers, or 12 with the above bull calf)
Total,	40	which with the six 1929 calves to May 1 makes 46.

- John H. Hatton, D. 2

IN THE NORTH CAROLINA LEGISLATURE

"Fundamental studies looking forward to the establishment of a comprehensive system of State Forests, Parks, and Game Refuges were authorized in an act adopted during the closing days of the session. It directs the Department of Conservation and Development to make a survey of forest, cut-over, waste, and shore lands to determine which are suitable and needed for such a proposed system. The conservation department is authorized to obtain options on suitable tracts wherever possible and to report to the Governor and next General Assembly the result of its findings.

Another forestry measure which is expected to result in the stimulation of interest in forestry practice and benefits therefrom is an enabling act authorizing the federal government to purchase lands in Eastern North Carolina for the establishment of National Forests. Conservation officials believe that something will be done along this line at a time not so far distant under provisions of the McNary-Woodruff bill which passed during the last session of Congress." From N. C. "Conservation and Industry"

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII. No. 29 WASHINGTON, D. C. July 22, 1929

50 YEARS AGO

Letter from Prof. C. S. Sargent to Dr. Charles W. Eliot, 1880.
(From "Pioneer in Forestry Conservation," by Christopher C. Andrews)

There are, I believe, two reasons why schools of forestry cannot succeed at the present time in the United States and why, therefore, it is not wise to undertake to establish them. This entirely leaves aside the question of the propriety of asking the Government to aid by subsidy any more State or private enterprises, a question about which I believe there is a very strong counter-feeling. My reasons for thinking that it is not now advisable to undertake the establishment of schools of forestry in the United States are that there are no teachers to teach and no scholars who want to be taught in such schools. There are no teachers, because as yet no one can have possibly gained sufficient knowledge of the real meaning and wants of American forestry in its relation to any given locality to be able to treat it scientifically. European experience and European methods cannot aid us in presence of the problems we have to solve; and European instructors would be worse than useless at the head of an institution founded for the purpose of teaching American forest methods. And yet you must get your instructors from Europe, for who is there in this country to place at the head of such an establishment as you propose?

There can be no serious pupils yet in such a school, for there is not yet a demand in this country for regular professional foresters, the sort of men a forest school is intended to train, and whose life work is to be forest management. The time will come when there will be a demand for such men, when every great railroad in the United States will have a regular forester whose life work it will be to rear and manage railway forests, and whose corporate and private capital will be largely directed and employed in planting great tracts of forest on the plains and prairies.

Then foresters will be needed and then they will be as well paid and as regularly employed as railway or mining engineers. Then, when young men see that there is an opening for them in this direction, there will be plenty of pupils, who will be glad to devote years to fitting themselves for the position of foresters. Now there is no inducement and there cannot be for years to come, or until the destruction of our forests reaches a point where higher prices for all forest products set people to seriously consider the importance of renewing them.

A forest school today in this country must, like the agricultural colleges, go outside of its special sphere, or else as a school fail through want of pupils. What this country does want is not forest schools, but experimental stations for forestry, experimental arboretums in which the officers need not be hampered with unwilling students, but may be allowed to devote themselves to those experiments on which alone the future system of American forestry can be safely based, so that when the time comes and the demand is felt for a class of trained forest managers, the information will have been acquired which will make it possible to properly and safely instruct them.

There is an immense amount to be done at such an establishment in testing species, in studying methods suited to the various climatic conditions peculiar to every region, in creating public sentiment, in devising and recommending legislation, in stimulating experiments by others, and recording the result of such experiments for future use. You must remember that a really safe system of forestry, unlike that of any other branch of agriculture, can only be satisfactorily established after long years of carefully recorded experiments.

This generation will have more than it can accomplish in experimenting and preparing, that the next may safely and scientifically teach. For you must remember, too, that it will not do to make a mistake in teaching how to plant and manage a crop which must take a lifetime to mature. If a man plants a crop of corn, and selects the wrong variety, the wrong soil, or situation, or manure, the mistake is serious enough, but it is not fatal, and can be remedied the next year; but suppose he plants a crop of trees and does not find out for thirty years or more that he is all wrong and has selected a worthless species and a defective method, the mistake is not so easily remedied. Who is there today who can safely say what the right tree to plant on the prairies is? Who can know until the plantations made there have had at least a fifty years' trial, and a crop of timber has been harvested?

Let there be as many experimental stations as can be established, put them in charge of the best men money can hire, let these officers not only make experimental plantations themselves, but let them use their influence to induce others to do the same (the more the better), note the results carefully and conscientiously; here will be the foundations on which will be slowly but safely and securely reared the true system of American forestry.

IF COUNTED AT SPACE RATES . . . .

Suppose the Forest Service had to buy the newspaper space that is given it to spread the news it has to give out about conservation and protection. What would it cost?

It is manifestly impossible to make an accurate check of the usage accorded our press material. The clippings that come in represent only a small percentage of the 22,000-odd newspapers and periodicals in the country. But we can venture a guess.

At a very rough (and very conservative) estimate, the space received on our press releases on the last Forester's annual report would have cost, at newspaper lineage rates, approximately $3,970. One recent press release dealing with the qualifications necessary for the ranger's job got better than $1,750 worth of newspaper space, according to our estimate.

Figuring that as somewhat better than average results, (although probably it is not), the space given to press material issued by the Washington office alone during the year 1928 would have a commercial value of some $150,000.

Multiply that by the press activities of all the Districts, all the Supervisors, and all the local Forest officers, and we run into millions. Add to that all the other news on forestry, including the activities of the States, associations, and others interested in promoting the cause of forestry, and ------- well, we're scared to talk about it.

What is the reason for the fine reception given by the press to Forest Service and other forestry news releases? We give out news. We say our say in plain, outspoken terms. And the press of the country, with fine public spirit, takes it and wants more.

Do we realize fully the value of our press relations? When a cigarette manufacturing company appropriates twelve million dollars for its 1929 advertising campaign, publicity seems to be worth thinking about. Advertising is the first and indispensable line of attack in a commercial selling campaign. Isn't it worth while to consider how we can give more effect to our own efforts to sell forestry through our press material? - C.E.R.

PAUL BUNYAN SCALER

By W. J. Perry, Deschutes

Ranger Lloyd J. Wirth is a scaler - put that down! Not only has he an enviable record for accuracy of scale, but as for mathematical scale book errors - well, only the Almighty, or possibly George Stevenson, knows how many hundreds of thousands of logs since the last error, but placed end to end they would probably make a boom to Yokohama or some place. Lloyd's job is the Shevlin-Hixon Company sale, but every time actual work slackens up there he scales on one of the other sales just to keep his hand in. Under mid-winter conditions he has scaled in one day 780 long logs (calipered) with a total net scale of 388,750 B.F. and again 1320 short logs in the bunch with a scale of 277,360 B.F., and yet again for twenty consecutive days his average was 810 short logs, or a total of 16,200 logs and a scale of 3,588,370 B.F. for the 20-day period. This latter 20-day record was on the Shaw-Bertram sale in February and March this year.

Recently he found that in scaling 1000 logs he used 6 hrs 30 minutes actual scaling time, and:

4000 figures in numbering logs
2000 strokes of the stamping hammer
1500 times the rule was laid across log ends
4502 figures to record length, diameter, net scale, total net scale and number of logs
185 figures to record defect
323 letters to record kinds of defect
34 times the sec. twp., range, and where scaled were written across page heads, then:

correctly added the scale of the 1000 logs, 33 pages of figures, posted them in the journal at back of book -- and nothing to do 'till tomorrow.

It would probably be of little use for anyone afflicted with housemaid's knee, flat feet, heating-stovitis, or just plain georgedoitiveness to attempt to break the above record. In fact it probably closely crowds the border line where quantity is gained at the expense of quality even when done by a naturally quick man expert by long practice.

BEFORE AND AFTER TAKING

By F. H. Eyre - Washington

Every one is familiar with the advertisements in the newspapers for "Simpson's Cure for Simps" or "Ingraham's cure for Invalids" and the customary picture of an emaciated man before taking the remedy and a corresponding one of the same man in robust health after taking 3 bottles. The foregoing may seem far afield from forestry, yet in the idea there is a certain amount of psychology applicable to our work. Every now and then pictures of the home city 20 years ago and now cause much comment on "how we have grown." Several years ago I ran across some pictures of Big Cottonwood Canyon (Salt Lake City Watershed) taken about the time the Wasatch National Forest was created. The contrast with the present condition was amazing. The brush and aspen timber which now makes an excellent cover was burned and grazed to the ground. A repeat picture showing conditions today and printed in the Sunday rotogravure section would get across to the "dear public" more of the good work the National Forest is doing than many columns of writing. Repeat pictures have been taken in Manti Canyon on the Manti National Forest which tell a similar tale.

In the Timberman of March, 1927 "Photographic Story of a Timber Cutting," W. W. White illustrates "before and after" in western yellow pine cutting in Montana. What happens to the residual stand as well as to reproduction may be clearly seen. It is an education in marking to study these pictures.

In the Service Bulletin of April 22, Col. Peck tells of the initiation of a "Camera Points" project in D-2. It should net good results if old pictures are followed up with repeats. Also it offers possibilities for the future. I have heard many arguments as to whether this patch of sunflower is encroaching into the bunch grass type or that area of Douglas fir or aspen reproduction is extending itself into the sagebrush, etc. A picture or two taken from a definite point, repeated at 5 year intervals will answer the questions and give proof to the skeptical.

Likewise where permanent sample plots of cutover or thinned areas are established plenty of pictures can profitably be taken with repeats at times of remeasurements. Some excellent pictures of this kind covering a period of 20 years at 5-year periods present a vivid graphic history for sample plots in D-5. In my opinion there is a big opportunity for expansion of this type of work.

AMERICAN TREE AND ITS USES

This is the title of an educational features "Strip" sponsored by the National Lumber Manufacturers Association. The sketches will be drawn by Calvin A. Fader who is now featuring "American History by Motor." The sketches will appear in the newspapers for a period of one year beginning next September.

Fifty-two "commercial" trees have been selected to be featured - one tree each week for one year. Each strip will contain five panels in which will be told how each tree serves mankind. For example: In the hickory tree strip Panel No. 1 will hold a drawing of the tree in the upper half; in the lower half a map of the United States, a shaded area showing where hickory trees are to be found. Panel No. 2, drawings of hickory leaves, buds, nuts, blossoms, and bark. A study of these pictures will enable one to identify a hickory tree in the forest. Panel No. 3 will feature some of the principle products of hickory wood--golf clubs, axe handles, wheel spokes, etc. In Panel No. 4 pictures and text will tell the annual cut of hickory; its value, etc. In Panel No. 5 will be pictured something that will forcibly center the mind of the reader on the subject.

The pictures of trees, their leaves, bark, etc., are being furnished by the Forest Service, together with information concerning growing trees. Facts concerning the product of trees--lumber and the many objects manufactured therefrom--are being compiled by the technical men of the National Lumber Manufacturers Association.

FOREST LAWS OF EAST PRUSSIA BY PROCLAMATION OF EMPEROR FREDERICK. BERLIN, DECEMBER 3, 1775.

Translated and submitted by R. A. Bottcher, Columbia.

(1) "Anyone moving a boundary sign or damaging or cutting down a boundary tree (witness tree) or damaging any warning sign, fence or barrier or any sign shall be fined 200 thalers (about $131.00) and in case he can not pay the fine shall be imprisoned for one year.

(2) "Anyone starting a fire in or within 100 paces of a forest or using a pitch-torch or any fire when fishing or catching crawfish in any lakes within and on streams or creeks flowing through a forest, or who smokes tobacco during the dry or summer season within a forest, even though no damage is done, shall be punished with a four-weeks jail or penitentiary sentence, and if any damage results, shall pay such damage; if he can not pay the damage, the period of imprisonment shall be in proportion to the amount of damage ascertained, up to 100 thaler ($75.00) one-fourth year; from 100 to 200 thaler ($75.00 to $150.00) one-half year; and 200 thaler and over, 1 year imprisonment.

(4) "Any person wilfully or maliciously starting a fire in a forest with intent to damage such forest, shall be punished with 10-year penitentiary sentence at hard labor and upon establishing the moral responsibility, the sentence may be increased even to a death penalty. Anyone discovering and reporting such evil-doer, shall receive a reward of 50 thaler.

(6) "Any person cutting a young oak for a whip stock or any other purpose shall be fined 5 thaler or 14 days in jail on one-half ration of bread and water.

(10) "Any person or his herder or shepherd, who, disregarding trespass notices drives or allows stock to drift on to any reservation (closed area) or forest mentioned on such notices shall be fined for first offense for each horse or cow, one thaler and for each sheep or swine 30 groschen (about 30¢). No other penalty shall be imposed. Should, however, this trespass be repeated, the same monetary penalty shall be applied with an additional penalty of 6 months imprisonment for second offense and if again repeated with two years imprisonment at hard labor.

(23) "Any Schneidemiller (literally sawmiller), who, without securing a permit from a forester or regular appointed agent or owner, cuts any timber shall pay a fine of 10 thaler for each piece cut and in case he is not able to pay shall be given a sentence of 4 weeks in jail or penitentiary. The same penalty shall apply to any tanners, harness or saddle makers, who buy skins of game animals without permit.

PAUL BUNYAN COMES TO LIFE ON CARSON

Believe it or not: Rincon Blanco once boasted of having a family who ate five tons of turnips from fall until Christmas, and the remaining part of the winter ate one hundred pounds of beans per month. But now come Mrs. Amy Phillips with her little son Jack, who is only six months of age but is just half as tall as his mother. - D. 3 Bulletin.

MILL STUDIES OF DIMENSION STOCK MANUFACTURE

During the past half month the last of a series of detailed dimension mill studies was conducted at the operation of the Conner Lumber and Land Co., Laona, Wis. This concern has taken an unusually active interest in the manufacture of by-products from mill waste, and by trial and error methods has worked out a great variety of products - 15 or more - that seem to work in well as side lines to lumber, the primary product. It is a notable example of the modern trend to convert sawmills to factories instead of concentrating on lumber production as was the custom up until recent years.

One of the by-products is dimension stock. This is cut from the choicer slabs, edgings, and trimmings developed in cutting standard grades of square edged lumber. Three to eight men are employed in the various stages of dimension stock manufacture. The size of crew is governed by the proportion of hardwood logs going through the mill. Birch, maple, basswood, and elm are the leading hardwoods cut, and of these birch and maple comprise 95 per cent of the total cut of dimension stock. Basswood and soft elm waste is cut into building and fence lath.

In common with most sawmills the bulk of the dimension cut is in the form of squares. In this particular instance a satisfactory market has been developed for the short wide stock resawed from slabs. Furthermore, by usual sawmill methods squares are more easily manufactured and handled than flat stock; that is, pieces 1 inch by 4 inches by 21 inches, 2 inches by 6 inches by 30 inches, etc.

The study at this mill included determination of the percentage of the volume of logs recovered in the form of dimension stock, the manufacturing methods employed, drying methods, and the amount of labor required to perform the various operations. Since similar studies have been conducted at other mills it will be possible to compare the effectiveness of different operating methods and types of equipment. One of the chief objectives of these studies is to determine from the results of field studies the combinations of equipment and methods that offer the best opportunity for success.

The Connor Company keeps uncommonly complete cost figures. Its findings indicate a big margin of profit on the dimension stock operation, but as usual many items of cost were omitted. - Forest Products Laboratory Progress Record, May, 1929.

U. S. VETERINARY CORPS COOPERATION

On the Wichita Forest are herds of buffalo, longhorn cattle, elk, deer, antelope, Rocky Mountain sheep, and wild horses. There are 42 animals in the herd of longhorns and this comprises the only known survivors of these, a once famous breed.

The ascendency of the Texas steer and the great drives over the trails from Texas to Abilene constitute an epoch in our economic development that is replete with romance and adventure.

Congress by a special act appropriated funds for the purchase of the few remaining longhorns and an extensive and intensive search was carried on throughout Texas and the Southwest for such animals as remained. All that could be found were purchased and shipped to the preserve.

It is of course apparent that an infectious or contagious disease among these animals could be an irreparable disaster, for the carefully preserved remnant of an almost extinct breed might be quickly wiped out.

Here the Army veterinary service, as represented by its officers on duty at Fort Sill, has played an important part. Cooperation with Forest Service officials has been prompt and effective and has been the subject of special commendations in the case of Captains Rife and Kintner.

Late in 1927, an outbreak of contagious disease occurred in the herd of antelope which for a time threatened its existence. Prompt diagnosis, isolation and immunization carried out by the veterinary officers at Fort Sill checked further losses among the antelope and prevented the spread of the disease to other animals. In the fall of 1928, hemorrhagic septicemia appeared in the longhorn herd causing a loss of 5 animals in a few days; again the prompt action of veterinary officers effectually stopped the infection.

The Rocky Mountain sheep were immunized against hemorrhagic septicemia before being released. - From an article in the "Veterinary Bulletin," for April, 1929.

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Most encouraging has been the response from automobile manufacturers to some recent correspondence in which the Forest Service suggested the possibility of including ash receivers as standard equipment on all types of motor cars. A bit of voluntary cooperation just come to our attention has backed up our general impression that the auto manufacturers are a good sort. Because the Autocar Company, manufacturer of motor trucks, sells and delivers its trucks in the chassis form only, it was not in a position to install ash receivers in the truck cabs. The company, however, volunteered to aid us in reaching truck owners with suitable publicity. In the July issue of its monthly magazine, "The Autocar Messenger," appeared a forceful article entitled "Does an Incendiary Drive Your Truck?" Written in the form of an interview with one of the company's executives, the article said, among other things:

"Think of it! 30,000 forest fires a year simply because somebody reached for a cigarette instead of a sweet!.....

Personally, I should like to recommend a general installation of ash trays and a heart-to-heart talk to every driver. Let autocar owners tell their drivers that the ash tray is a part of his truck, as essential to be used at the proper time as the very brakes themselves -- for it is, in effect, the brake to a lighted cigarette or a burning match."

"The Autocar Messenger" goes to 50,000 truck owners in all parts of the country, and this publicity therefor will reach exactly the individuals who need such information.

BE NONCHALANT - LIGHT A MURAD!

By W. E. Anderson, Wenatchee

Here is a true story which shows how fires sometimes get started, and it might happen without the person responsible ever knowing that he caused it.

The first year I patrolled for the Service there was no restriction on smoking in the woods by Forest officers. I was coming down Gold Creek trail, smoking a cigarette, when I suddenly heard a noise on the hill above me. Looking up I saw a big shaggy brown bear digging in a log. He noticed me about the same time but didn't seem to be nearly so surprised nor excited about it as myself. There was good going for about a mile and I made use of it. When I stopped for breath I wanted a smoke, which made me wonder what had happened to the cigarette I had lit just before seeing the bear. A cold feeling inside told me that I hadn't swallowed the cigarette, so I decided that it just fell out of my mouth when it expanded upon my seeing such a shaggy bear. There was a lot of dry grass along the trail where a lighted cigarette could easily start a fire, so I had to go back (I admit it took all the will power I had) and sure enough there was a fire along the trail, about three feet in diameter. After making short work of the fire I beat it for camp, though the bear was gone, I didn't know where, nor did I stop to find out!

If I hadn't thought or remembered smoking at the time of my surprise, I'd never known what started the big fire which certainly would have spread over the mountain. Of course, we know who would have been blamed.

OH! WHAT A PICNIC

Members of the Ogden office and their families went to Lagoon yesterday after work for a picnic, and we want to assure you it was the best picnic ever. The main event of the afternoon was a baseball game put on by the men. According to the umpire, S. B. Locke, the game ended with a 9 to 10 score. The play was hotly contested throughout. It was a pitcher's battle, as the reader may judge from looking at the score and learning that five innings were played. Sanford, for the winners, had a slight edge over Thompson for the losers. Sanford pitches a mean underhand ball. The losers claim that was not the only underhanded part of the work. For the losers, Thompson, Richards and Wycoff distinguished (?) themselves, while the most brilliant work for the winners was executed by Sanford, Rutledge, Stratton, and the Wasatch additions (Shep and Mike O'Neil). The star play of the day was made by shortstop Rutledge, who took a hot liner off his shoe tops and doubled the runner at second unassisted. Ed. Note: Mr. Rutledge locked as though he had worked all day in a roundup when he came in after the game for the big feed. The eats were splendid.

Mr. Rutledge later displayed his ability to ride a horse in true western cowboy style. He picked himself a fine bronco on the Merry-Go-Round and rode "without pulling leather." All he lacked was the spurs with which to scratch the horse's neck. Oh yes! He also used his hat for a whip.

Later in the evening we waltzed to the beautiful strains of "The Desert Song" and did other gymnastics to the tune of "Button Up Your Overcoat." - D. 4 Bulletin

PINUS MONTICOLA POLLINATES

By J. L. Mielke, D. 6

An unusual sight in the form of a huge pollen cloud was witnessed by the writer and two other members of the Portland Forest Pathology office while doing some work on white pine blister rust investigations in the Kootenay District of British Columbia. It was the latter part of June, 1928. A thunder storm preceded by a very strong wind was approaching from the west. The path of the storm was down a valley bordered by high mountains. We were working within this valley and on the north side of a creek flowing through it. On the opposite side of the creek the valley floor sloped gently upward forming somewhat of a bench about one-half mile in width between the creek and the adjoining mountain. On this bench is an almost pure stand of western white pine of pole and standard size.

While seeking shelter from the storm under some trees, we chanced to look in the direction of the pine stand and observed that as the strong gusts of wind swept over these trees large clouds of pollen were carried into the air. In a very short time there was a solid cloud of pollen directly over the trees, estimated to be about one mile in length, one-quarter mile in width, and averaging about one hundred fifty yards in depth. The pollen was so dense that it entirely obscured the landscape on the opposite side of it from our view. In color the cloud resembled dense sulphur dust. The following day our work took us to the shores of a nearby lake which was partially in the path of the pollen cloud and it was observed that the surface of the water at one end of the lake was entirely covered with the pollen grains.

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Vol. XIII No. 30 Washington, D. C. July 29, 1929

LIVESTOCK IMPOUNDING REGULATION UPHELD

D. F. McGowan, Washington, D. C.

Another and probably the final chapter was written in the litigation growing out of the arrest of Ranger J. T. Fears of the Apache National Forest for the shooting of a horse that had been impounded and ordered destroyed under Regulation T-12, when on July 2, 1929, Federal Judge Jacobs, sitting at Phoenix, Arizona, issued a perpetual injunction restraining the County Attorney and Sheriff of Apache County, Arizona (1) from interfering with the enforcement of Regulation T-12, (2) from enforcing or attempting to enforce the laws of the State of Arizona, and particularly Section 602 of the Penal Code thereof, so far as concerns the operation and enforcement of Regulation T-12 on the lands of the United States in the Apache National Forest, Apache County, Arizona, and (3) from arresting and prosecuting the officers, agents, or employees of the United States under Section 602 of the Arizona Penal Code while they are engaged in rounding up, impounding, selling, disposing of, condemning, or destroying, under said Regulation T-12, domestic livestock found trespassing on said Apache National Forest in the County of Apache, State of Arizona.

Summarized, Regulation T-12 provides that domestic livestock found trespassing on National Forest land, if not removed upon notice, may be impounded by the Forest Service. Where the owner of the stock is known, written notice of the impounding is given him; where the owner is unknown, notice by publication is given. In either case the notice indicates when and where the stock was impounded, describes the stock by brands and other means of identification, and specifies the time and place it will be sold in default of redemption. Owners, to redeem their stock, are required to pay all expenses incurred by the United States in advertising, gathering, pasturing, and impounding it. Stock not redeemed by the owners is offered at public sale to the highest bidder, or otherwise disposed of. Stock offered at public sale and for which a bid is not received by the Forest Service may be sold at private sale, or be condemned or destroyed.

In the spring of 1927, action was started to rid the Apache Forest ranges of trespassing stock. Notice of the trespass was given to the owners so far as known. Thereafter such of the trespassing stock as were not removed by the owners were impounded by the Forest Service and notice of the impounding was given as required by Regulation T-12.

Such of the impounded stock as were not redeemed by the owners were offered at public sale, and such of this stock as were not disposed of at public sale were offered at private sale. Among the unredeemed and unsold stock were three horses owned by one Conner Trammell. The Forest Service was unable to sell these horses. On July 1, 1927, the three horses were shot and destroyed by Ranger J. T. Fears, who was acting under instructions of the Supervisor of the Apache National Forest.

On September 23, 1927, an information was filed in the Superior Court of Apache County, Arizona, by the County Attorney charging Fears with maliciously, unlawfully, and wilfully killing a certain brown mare, the property of Conner Trammell, contrary to the laws of the State of Arizona. The information was filed under Section 602 of the Penal Code of Arizona, which provides, among other things, that any person who kills any animal, the property of another, shall be guilty of a misdemeanor. A special prosecutor was engaged to present the case against Ranger Fears and to test the validity of Regulation T-12.

The Superior Court held in substance that Regulation T-12 was arbitrary and not justified by the general statute of Congress empowering and directing the Secretary of Agriculture to make rules and regulations for the National Forests; that it was in contravention of the Constitution of the United States, which provides that private property shall not be destroyed, misused, or taken unless by due process of law. The Court declared Regulation T-12 unconstitutional and without any basis or foundation in law. Fears was found guilty and he was fined $1.00. Thereupon the case was appealed by Fears to the Supreme Court of Arizona.

On March 19, 1928, the Supreme Court of Arizona reversed the Superior Court for Apache County, holding that as Fears was an employee of the Forest Service and in shooting the horse was obeying the regulations of the Secretary of Agriculture, he could not be held guilty of killing the animal maliciously under the Arizona statute. The Supreme Court did not pass upon the validity of Regulation T-12, but did direct that Fears be discharged.

In the meantime, however, and at the instance of the Forest Service an action was brought by the United States in the Federal Court for Arizona against the County Attorney and Sheriff of Apache County to enjoin and restrain them from enforcing or threatening to enforce Section 602 of the Penal Code of Arizona so far as it concerned the operation and enforcement of Regulation T-12 on the National Forests, and asking that this Section 602 be adjudged null and void and of no effect so far as it concerned the operation and enforcement of Regulation T-12.

On January 12, 1928, Federal Judges Ross, McCormick, and Jacobs, sitting at Los Angeles, California, issued a temporary injunction in connection with the relief prayed for by the United States. On July 2, 1929 the temporary injunction was made permanent by Judge Jacobs. The decree granting the perpetual injunction states that Regulation T-12 is a lawful exercise of Federal authority, the laws of Arizona to the contrary notwithstanding; that Section 602 of the Penal Code of Arizona is not applicable to the United States and its officers and employees engaged in disposing of livestock impounded under Regulation T-12, and that the said Section 602, if applied in such circumstances, is contrary to the Constitution and laws of the United States and void.

The Federal Court decision is a sweeping victory for the Forest Service in this most important case, and puts at rest all questions as to the validity of Regulation T-12.

District Law Officers French and Dechant are to be congratulated and complimented for their most efficient handling of this important litigation, in the State and the Federal Courts.

THE RISE OF THE LODGEPOLE POLE.

With the discovery of the smelter dust method of preventing decay at the ground line and with better facilities for giving creosote treatment in cases where it is desired, the usee of lodgepole for telephone poles in place of the naturally more durable western red cedar is increasing rapidly. The Western Electric Company alone is reported as taking 120,000 lodgepole telephone poles. Power companies are also known to be buying the pine poles to an increasing extent. This new use of lodgepole means a lot to those Districts which have large areas of the lodgepole type, especially Districts 2 and 4. It not only offers an additional market for timber which should be disposed of under our management plans, but also means better utilization of those trees which have the necessary form for poles than would be possible if they were cut for ties, and occasionally gives opportunity for the thinning of some over-dense groups of trees which, because of crowing, have not reached diameters suitable for tie production and unless thinned would be unlikely to do so in the future. The market for cedar poles in Districts 1 and 6 does not seem to be seriously affected as yet, but apparently many companies in the Rocky Mountain region will hereafter take increasing quantities of local pole material instead of paying the heavy haulage charges on cedar.

TWO FELLOWSHIPS AT CORNELL OPEN

Applications for the two Charles Lathrop Pack Fellowships in Nature Education and Forestry for 1929-30 at Cornell University are still being received, according to word from Professor Hosmer of the Cornell Forest School. Owing to the small number of properly qualified applicants for the fellowships, there has been delay in making the final awards for the coming school year, and there is still opportunity for foresters who desire to make special studies in Public Relations work.

The investigations to be made under these fellowships will deal with problems of forestry education with the object of determining methods and practices affecting the education of the public in the use of its natural resources. Ordinarily the fellowships will be available only to persons with the equivalent of a Master's degree. The fellowships are supported by the Charles Lathrop Pack Forestry Trust, and pay from $1200 to $1800, the allotment to be determined by the nature of the research.

Applicants should submit a full statement of academic and professional training and experience, together with the names of three persons well acquainted with the canidate. Applications should be sent to Prof. E. L. Palmer, Fernow Hall, Ithaca, N. Y., before August 15.

Wise Sayings

Ex-Governor Harding, Des Moines, Iowa: "As I understand it an expert is an ordinary man away from home."

Robert Barkley, Sault Ste. Marie: "I do not fear the lightning." Mr. Barkley is manager of the Soo high school orchestra and an excellent conductor.

Dr. Raphael Zon, St. Paul: "The struggle for existence has been said to consist of four factors. First, the getting of a piece of bread; second, the acquirement of some butter to put on the bread; third, the finding of a little sugar to eat with the butter and the bread; and fourth shooing away the flies while you enjoy your bread and butter and sugar."

FOUND -A LITERARY SHEEPHERDER

By C. C. Olson, Deschutes

Picture a bearded gentleman "shepherd", engrossed in writing a monograph on the geological formation of his range for the home town paper. That was my introduction to the guardian of the sheep on the Big Marsh range last year; a bit unusual, perhaps, but Herman looked unusual, so I thought no more about it. Later, I had a meal with Herman and the packer, one Pete, who was decidedly not a literateur. While squirming around to keep my share of the fodder from the yellow-jackets, I noticed a sign tacked on a tree; upon inspection it read "Camp Esposito".

I asked Pete about it and his remarks were much like this, "It's sumpin' in Spanish. Herman, the dam bookworm, he done it. But I fixed him" said Pete, amid guffaws. "One time I found the sheep straying a bit farther than I thought they ought. I says to Herman, 'Herman, you old skunk, I'm agoin' to get you a book you need'. 'What's that? ' says Herman. It's a book called 'The Wandering Herd' I says." And Pete chuckled mightly.

I'd rather forgotten the incident, when recently I came across another camp - and another sign. "Hmm!", I thought, "What's this? Looks like some of Herman's work. Neat but not gaudy!" This one read "Camp del Maurer", in honor, no doubt, of Herman's boss, a Mr. Maurer. What will this year's harvest be, I've been wondering, probably a "Camp de Rambouillet" or a "Ye Signe of Ye Merrie Merinos".

WOOD IN AMERICAN ROADS

By E. N. Munns Washington

Wood has played an important part in the development of transportation from the time of the birch-bark canoe to the modern airplane. In road building, its part has not been so marked perhaps as in shipping, but nevertheless wood has had a prominent role ever since De Soto built the first bridge on his westward exploration through the south. Seventeenth century records in New England and Virginia indicate the first bridges were formed by simply felling trees where desired, the flooring being of small poles. Such bridges were usually short, and used only to a limited extent. With the development of equipment and skilled artisans capable of working timbers, more adequate bridges were built, stimulating communication and commerce.

In some places, the roads were impassable during wet weather, and swamps formed definite barriers to ready intercourse. This was in part corrected by the use of corduroy still used under conditions similar to those responsible for this initial development, as in the less developed sections of the redwood and Douglas fir regions, and the overflow lands of the Mississippi bottoms. Travel over these roads even with our modern spring-equipped vehicles and shock absorbers is a nightmare but in the early travel it must have been far worse as wagons and uncushioned stage coaches advanced from log to log by a series of leaps and bounds.

Corduroy roads were used where wood was generally available and did much to make transportation and communication possible until more permanent roads were prepared. However, where the ground was soft and wood was scarce, as in the western prairies, transportation except by water was out of the question for many months. Farmers were unable to get their grain to market (Chicago) and an over supply of local food supplies meant waste for it could not be utilized. About 1825, however, just before the development of railroads began in the West, a new type of road came into being that paid handsome dividends to the operators, brought markets to the former, and assisted him in becoming an economic factor in the nation. This new type was the "plank road." Sills of timber were laid down, heavy planks were placed across them and transportation in all kinds of weather and across the seas of mud became possible. While the cost of the road was high, needs of the populace were such that the roads were heavily used and their cost returned to the builders often in the first year. The plank road, used first in America on a short stretch of roadway into Chicago, rapidly gained favor and became quite a fad. Indeed the idea spread so rapidly that in a few years plank roads virtually traversed the whole of Illinois, doing much to aid settlement, particularly of northern Illinois and eastern Iowa. As the railroads, came, the plank road went out of existence, except where it served as a feeder to the railroad.

Dear Old Broadway, as the song writers call it, comes to the front as the scene of the first trial of woodpaving blocks in America. It seems that the cobble stones, or as it was known in 1830, "causewaying or pitching" failed to withstand the early traffic and the streets became full of large ruts and holes for which the early roadways of America were probably justly famous. This wooden pavement was formed of hexagonal billets of wood, 6" on each side and 12" in depth. The blocks were coated with tar or pitch, and set in sand forming a smooth surface. Its great advantage, claimed even in the early days, was its smoothness and noiselessness. The great objection to these pavements was that the wood could not be kept clean, and the fear that during damp weather a vapor might arise which would prove hurtful to the salubrity of the larger cities. One trial included placing first a plank base, then the hexagonal blocks. This form gave better results than the first described road. Both types, however, failed as the wood rotted away.

WORK PLANS

By M. F. Pincetl, Santa Fe

I am a firm believer in any plans which will increase the efficiency of doing our work, providing these plans are made up in an understandable form and are simple enough to be practical for the men who are to use them, and I feel that the administrative work plans if properly and intelligently made up can be followed out to a certain extent but hardly with one hundred per cent efficiency. If we have ranger districts where these plans can be followed out one hundred per cent, such a district must be classed as a non-progressive district for the simple reason that the Forest Service is advancing so rapidly that new policies are continually coming up. Consequently the plans and the work must necessarily at times subordinate itself to new jobs which were probably not anticipated at the time the plan was made. I hope that the powers that be will not discourage the personnel from accepting the plans by criticizing the field men if the plans are not fully carried out without first fully investigating the handicaps which might have come up and I hope they will not be obstinate in their judgement regarding departures from the plan when new jobs come up and are done by the men, using their best judgement and knowing conditions on the ground.

As I see it these plans serve several purposes - the main one being to make an analysis of the work on the ranger district to determine the load, whether too light, just right or too heavy. The next primary purpose is to plan trips so as to eliminate lost motion and travel. With these two objectives properly worked out we will ultimately get leads as to proper distribution of finance allotments. My experience has been that the most difficult part of the plan is the planning of trips a year in advance and the inclusion of numerous minor details within these trips to reach certain standards we have adopted. A great deal of time is consumed in working this out and we may say that in many cases unforeseen conditions will disturb these trips to a considerable extent. Therefore in a sense I feel that a great deal of time consumed in attempting to work out such details is lost, and I hope that in the future we may see our way clear to cut down some of this work by simply making part 1 and 2 of the plan and leaving it up to the field men to plan their own trips in accordance with jobs listed. I feel that if a complete detailed analysis including the trip schedule was made once every five years it would be a sufficient analysis for the average ranger district to give the administrator in charge a clear cut understanding of the conditions and a check-up on the load of the district, - unless, of course, something unusual occurs, such as increased activities due to timber sale operations, recreation, etc., that would not be offset by possible elimination of other activities on the district. We could then make up the job list yearly and leave it up to the field men to plan their trips and do the work and know that under the district load the work could be carried out. It certainly seems that if we trust the judgement of the district ranger to handle large areas of public lands involving large monetary values we could go a step further and trust them to work out their own trip schedules. In such schedules obvious minor details that cloud up the plan could be left out. It would make it easier to read and I am sure that simplifying a plan will assure closer adherence to it. We must not overlook the fact that field and personal contacts with our men (and this applies to all officers,) is one of the greatest means of getting results. We all know that when men are stationed in isolated places as most of our men are, without the outside contact and diversions that the lucky ones living in town get, and possibly with an an antagonistic lot of permittees or with complicated problems, a great deal more can be accomplished in bracing up the men by giving personal interviews and help on the ground than by all the correspondence that might be sent him. Personal interest of all superior officers towards their men is, in my opinion, one of the best means of getting things done. Its absence may create a general dissatisfaction which will lead to slackness of the work.

SMALL TREES EXPENSIVE

By H. R. Spelman, D. 6.

In connection with the yellow pine logging studies which were made on the Shevlin-Hixon Company, Bend, Ore. operations last fall, preliminary analysis indicates that the comparative cost of falling and bucking 10" trees is nearly five times as much per unit of volume as for 36" trees. The data also seem to indicate that 36" trees are the most efficient size to cut, that is the comparative time to produce one thousand feet log scale increases both above and below the 36" size. The relative labor cost per M.B.F. log scale ranged from $.59 for 36" trees to $2.88 for 10" trees, with an average of $.81 for all the trees cut. This would indicate that for this part of the logging operation small trees are very expensive to handle and that leaving them for a residual stand is good business as well as good forestry.

There is a Motion picture on this subject

"Selective Logging in Lake States Hardwoods." Ed.

"GIVE ME OF YOUR BALM, O FIR TREE!"

Have you heard how Hiawatha from his Gitch Gumee wigwam
Is restoring fens and sand plains, and the long denuded tree-lands?
How his "dreams and visions many" have resulted in appraisals,
And old loggers and taxpayers are submitting maps and options?

No more wastes his time in hunting by the swamp with the mosquito,
Nor his days in idle fishing and in swatting the no-see-um.
He has furnished up his quarters by the Shiny Big-Sea-Water
And brought in his various trappings from the Rockies and the plains-lands.
Longhorn type machines from Denver, compasses from the Dakotahs.
Desks and bentwood chairs from southlands, and a force of nimble cruisers
From the four winds of the heavens.

Coming from the old Shoshone, with its virgin stands of lodgepole,
I was filled with bitter heartbreak at the North Woods devastation
In the melancholy Northland.
Missing much the totin' pack rat and old junipers and cedars,
In this land of mewing seagulls and of humming birds and hemlocks.

Oft has come Heap Big Chief Tinker, in a speedy rolling Hudson,
With his Waterman and wampum, and his acquisition pointers
For observance of the Weeks Law.

We have searched the village libers for the titles to these tree-lands,
From the time the Indians hunted and in vision saw the white man -
Heard their axes in the distance, heard the buzzing of their sawmills,
Till their lands were all cut over and their woods were much depleted,
By the Paleface and companions.

Now to burned o'er fens and marshes, will return the goose and heron,
And the timid deer with antlers may be safe within his thicket.
Now the loon and grouse and robin build their nests in solid safety,
And the jays and crows and ravens hold convention in new tree tops.

And the pulp and paper companies, for the bulging Sunday papers,
May demand their spruce and jackpine.

By the shores of Gitche Gumee, on the Bay of Big-Sea-Water,
Once again shall rise a forest.

IGNORANCE IS RELATIVE

One of the paradoxical results of the swift advance of modern science is that ignorance is specialized along with knowledge. A man may be at the same time learned and ignorant. The field of knowledge has expanded beyond the limits of the individual mind.

Not only is ignorance relative, but it also differs in kind. Like Einstein's relativity, there is a general ignorance and a specialized ignorance. The specialized ignorance is that of the learned, who know only their own lines. If you attend a great meeting of scientific men, like that of the American Association, you will be struck by the profound depth of ignorance which lies like deep , dark swamp holes between tufted islets of firm ground which are ablaze with the sunshine and flowers of localized research.

Each isle is occupied by its group of learned men who are ignorant of the equally important learning of the occupants of other isles. When they undertake to step from one oasis to another they are apt to sink as deeply into the tarns of ignorance as does the unspecialized public in its stumbling after new knowledge.

There have been some injurious examples lately of hasty, overconfident, enthusiastic exploitation of theories touching the very foundations of science, which theories have been proclaimed as established laws of nature solely on the basis of their "successes". But these "successes" covered very brief periods, of a few years only, and were of a special and limited nature growing out of the theories themselves. It is no wonder that in such cases the back track or a new track has had to be taken. – Excerpts from an article by Garrett P. Serviss in Wash. Times.

MINING METEOR MOUNTAIN

Meteor Mountain, a curiosity to geologists and other scientists for the last century, is to be mined. This mountain, the center of which is a crater-like basin 570 feet deep and nearly a mile in diameter, was formed by a meteor falling to the earth about two thousand years ago, as estimated by geologists. The land on which Meteor Mountain is situated is some twenty-two miles west of Winslow, Arizona, and about six miles south of the Santa Fe railroad.

The mountain is now the property of capitalists who have spent years in exploration work trying to determine the exact resting place of the meteor so that it may be mined for the values which it is believed to contain. Drilling disclosed the fact that the meteor had struck the earth at an angle and was logded under the southern part of the rim of the mountain. Drilling was then concentrated along that part of the rim, and some months ago those in charge of the work announced that the meteor had been found at a depth of 1,376 feet below the rim and that portions of it had been obtained, of which ninety per cent was of meteoric iron, seven per cent nickle, two-tenths ounces per ton of platinum and one-tenth ounce of iridium, making the meteor itself have an approximate value of fifty dollars a ton. As the total weight of the meteor is estimated to be about ten million tons, its money value if all of it is recovered will be about five hundred million dollars. The sinking of a shaft to the meteor is now well under way and it is believed that ore in quantity will be brought to the surface some time during this summer.

BIRDS RESPOND TO FEED AND WATER

Twenty-three different kinds of birds are seen daily at the Cochise Ranger Station where there is water and feed put out for them, reports the Coronado Bulletin. This number includes quail, doves, and song birds. D – 3 Bulletin.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture
February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

Vol. XIII No. 31 Washington, D. C. August 5, 1929

RANGE LANDS AND BOULDER DAM

By Dana Parkinson, D. 4

The Colorado River has a drainage area of 242,000 square miles, and 89% of the water comes from 38.6% of the area. (Wyoming, Colorado and Utah.)° 38% would be 59,000,000 acres. Two of these states, i.e., Utah and Wyoming, have over 60,000,000 acres of federal land with no control of grazing whatsoever, i.e., the open public domain and withdrawals for coal, oil, reclamation, etc. In addition, Colorado has another 7,000,000 acres in open public domain, exclusive of withdrawals. This makes a total of at least 67,000,000 acres of federal land in these three states with no regulation of grazing. There seems to be no data to show how much of this is in the Colorado River drainage, but I feel sure that many million acres are involved. There are also private and state lands involved upon which grazing and the erosion situation may not be properly controlled. A direct relationship exists between these range lands and the storage capacity of any reservoir such as is proposed by the construction of the Boulder Dam.

°According to Messrs. Collins and Howard of the U. S. G. S.:

> ".......Published estimates of the weight of dry material in a cubic foot of deposited silt under water range from about 33 pounds to 86 pounds. On the basis of 33 pounds to the cubic foot the quantity of suspended matter carried past Grand Canyon in 1925-26 would occupy 313,000 acre feet if deposited in a reservoir, and the volume for 1926-27 would be 617,000 acre feet. On the basis of 86 pounds to the cubic foot the volumes for the two years would be 120,000 and 237,000 acre feet.

°W. D. Collins and C. S. Howard of the U. S. G. S. in an article printed July, 1928, by permission of the Director of the U. S. Geological Survey.

Suspended Matter in Colorado River at Grand Canyon, Ariz.

Date	Suspended Matter - %	Discharge		
		Second Feet	Tons per day	Tons per year
Jan. 5, 1927	0.4	3,530	3,800	-
Sept. 13, 1927	13.8	74,000	27,500,000	
Oct. 1, 1925 to Sept. 30, 1926. Weighted av.	1.15	19,900	617,000	225,000,000
Oct. 1, 1926 to Sept. 30, 1927, Weighted av.	1.89	23,800	1,210,000	443,000,000
Oct. 1, 1927 to Sept. 30, 1928	.89	21,500	517,000	189,000,000

> "It is evident that the cost of utilizing the water of the Colorado River depends in no small measure on the rate at which reservoir capacity will be lost by filling with the material now carried in suspension or rolled along the bottom of the river. The results reported above represent somewhat inadequately the weight of suspended matter carried by the river in two years. More frequent sampling would add to the reliability of the results for single years. Reliable results for a longer period are needed. Practically nothing is knownn about the so-called "bed load." The contributions of the different tributaries to the load of suspended matter have not been determined. As no comprehensive studies have been made of the deposition of suspended matter by the river, the rate of loss of reservoir capacity by silting could not be calculated, even if reliable figures for the weights of the suspended load and bed load were available. The results reported above, considered in connection with other published and unpublished data, indicate that practically all the recent estimates of the probable useful life of the reservoirs on the river are too high, because they are based on low figures for the quantity of material that will be deposited and high figures for the weight per cubic foot of the material in place."

The recent estimates of the useful life of the reservoir referred to above give from 105,000 to 137,000 acre feet per year as the amount of sediment deposited in the reservoir.

One of the above authors informs me that the figure 617,000 acre feet of sediment per year based on the weight of 33 pounds to the cubic foot for deposited material is probably too high to represent normal conditions. But any figure between 137,000, which he considers low, and 617,000 acre feet represents a heavy loss.

The above article is a valuable contribution to conservation in that it calls attention to a terrific annual waste.

If all the water stored was used for irrigation the silting would cause the abandonment of an additional 137,000 to 617,000 acre feet each year until the reservoir became useless. What can be done about it? Neither sluicing nor dredging can take care of the silt in a practical manner. If the silt could be kept in place where it originates, the problem would be solved.

Ever since 1912, research on erosion control has been conducted by the Forest Service at the Great Basin Experiment Station eleven miles east of Ephraim, Utah. On areas similar and adjoining, but under different methods of grazing, records have been kept of precipitation, and sedimentation. Comparisons have been made between erosion on overgrazed and on properly grazed areas.

These experiments have shown that erosion is greater on areas with only a thin cover of vegetation than on areas with a good cover. By increasing the per cent of the area covered with vegetation from 10 to 40 per cent, the amount of sediment eroded away on a given area was reduced 60% for a given amount of precipitation and this was accomplished in four years, merely by controlling the grazing.

On denuded ranges a good cover of vegetation can be restored without discontinuing grazing, by the application of good range management; by employing the deferred and rotation system of grazing and the bedding out system; by allowing forage plants in the spring to develop enough leaves to manufacture their own food before being grazed etc. Such management not only checks erosion, but produces a greater volume of forage for livestock.

All of the sedimentation in the Colorado River can not be attributed to unregulated grazing, and it would be folly to even suggest that such is the case. All denuded range lands may not be, and probably are not, as responsive to range management as the experimental areas cited above. It is commonly recognized, however, that the open public land and the uncontrolled ranges above mentioned have been abused to a point where they support only a portion of the vegetation possible. Some estimates state that these lands support less than half the forage possible.

Just what reduction in sedimentation in the proposed Boulder Dam could be expected by placing these lands under management, no one knows, but it does seem that the returns would justify consideration by those interested in the Colorado River project.

With all due allowance for geological formations upon which erosion cannot be checked economically, the tremendous annual loss thru sedimentation can be reduced by practical methods of range management, and these methods will at the same time increase the volume of forage produced for use of the livestock industry. The proposed investment of $165,000,000 in the Colorado River development would seem to warrant study of the 67,000,000 acres of open public domain and withdrawals which have no management of plant cover whatsoever, a portion of which fall within the Colorado River watershed.

THE NEW CROP OF FORESTERS

By F. H. Eyre, Washington

What type of boys are we getting into the Forest Service, where do they come from, what is their background, what their racial ancestry, why did they choose forestry as a profession, what character of work do they prefer? These are questions frequently raised by those who are concerned with the recruiting of personnel for the Forest Service. In a questionnaire submitted to recent forest school graduates some interesting facts were brought out which throw light on the above questions.

Apart from any reference to the "National Origins" controversy concerning the Immigration Act, it is interesting to see the stock from whence come our foresters of today.

Racial Ancestry	Father	Mother	
English	44	39	
German	32	34	
Scotch	19	15	
Scandinavin	8	11	
Irish	1	9	
French	5	4	
Dutch	4	4	
Russian	4	2	
Finnish	2	2	
Austrian	1	0	
Belgian	0	1	
Welsh	1	0	
	121	- 121	usable reports.

(1) Made up as follows: Swedish F - 5, M - 6; Norwegian F - 2, M - 3; Danish F - 1, M - 2.

The statement is frequently made that the boys entering forestry today come mostly from the large cities and consequently know very little about the great out-of-doors. This is not entirely borne out in the answers obtained.

SIZE OF COMMUNITY IN WHICH REARED

	Farm	Village under 1500	Town 1500 to 15,000	Small city 15,000 to 100,000	Large city over 100,000	Total
Number of Reports	46	13	43	15	25	142
Percentage	32	9	31	11	17	100

Why do boys enter forestry as a profession? In many cases it is difficult to determine the paramount reason for the choice and many reasons overlap. However, in the following table an attempt is made to segregate the reasons given where they are sufficiently clear cut to warrant tabulation.

REASONS FOR CHOICE OF PROFESSION

	Community in which Reared					
Reason	Farm	Village	Town	Small City	Large City	Total
Love for the outdoors	12	9	13	8	3	45
Effect of early forest environment (early woods work, etc.)	17	4	3	0	0	24
Glamour- appeal of the woods (by reading - Boy Scout influence, etc.)	0	0	4	4	14	22
Idealism	6	1	0	2	4	13
Interest in Natural Sciences	1	1	1	0	1	4
Total (usable reports)	36	15	21	14	22	108

Too few reports are included to warrant any very definite conclusions, yet a number of interesting trends are indicated. More boys who came from the farm and small town gave as their reason "love for the outdoors" than those from the city. This would seem to show that the city lad knows less about the outdoors probably because he has less opportunity to get into the country. Effect of early forest environment, life and associations in and near the woods, on the other hand, is confined to the farm boys almost exclusively. Glamour - the appeal of the forest - gained by reading, Boy Scout influence and the like as a reason appears to be confined to the boys reared in the city. They are the ones who know less about the forest at the time a choice of profession is made and are drawn to the work by different forces than the farm or small town boy.

Prospective Government foresters prefer above all else national forest administration. Forest surveys and research tie for second place in choice of work with timber management and public relations following in order.

Choice of Work	Per (1) Cent
National Forest administration	23
Forest surveys	15
Research	15
Timber management	13
Public Relations	8
Recreational Engineering	6
Engineering	6
Range management	5
Planting	5
Improvement Construction	4
Total:-	100

(1) Based on 130 usable reports.

CUTTING AND TREATING LOGS FOR CABINS

By W. R. Mattoon, Washington

Damage by insects to logs used for building cabins or rustic work causes large financial loss, annoyance, and unsightly condition of the building or other construction. It has been found; so the Bureau of Entomology tells us, that by cutting the wood at certain seasons of the year and by treating it with protective or repellent liquids practically all insect damage can be prevented or held in check.

Adult beetles sometimes riddle the bark with holes, causing sawdust-like borings to fall out; larvae or grubs of wood-boring beetles mine the inner bark, loosening it so that it often falls off, or they bore into the sapwood and sometimes the heartwood resulting in great damage or entire loss of the timber.

Remedy. - The beetles or grubs in the bark and wood can be killed by thoroughly saturating all parts with liquid orthodichlorobenzene. As it is necessary for the solution to penetrate the wood and reach the insect in order to kill it, great care must be taken to apply the liquid thoroughly. This solution is colorless and will not stain. It has a slight odor which disappears after a short while. Orthodichlorobenzene can be effectively applied either with a brush or a forceful sprayer. The spraying method is preferred since it saves much time and labor. One pint will treat a rustic chair. Three gallons is sufficient to treat 100 square feet of log surface.

Prevention of Injury. - The injury can be prevented according to the Bureau of Entomology by adopting one of the following methods:

When it is necessary to cut the trees during the spring or summer months, treat them as soon as cut with a solution of coal-tar creosote,-grade 1 liquid oil, 1 part, to kerosene, 3 parts. Before use it should be strained through burlap. The creosote stains the wood very little when diluted in this way.

When the treatment of the bark with creosote is objectionable, and the bark can be readily peeled. Remove the bark from the tree in strips, treat the wood with creosote and kerosene mixture, and replace the bark, using large-headed nails. This will prevent insect attack and preserve the rustic appearance of the wood. Where the bark is not especially desired, fell the trees at any time of the year, although preferably in the fall, remove the bark, and brush the logs with creosote. This will give them a pleasing stain.

Whenever possible, delay the cutting of the trees for log cabins and do it in late fall or winter when the insects are not active. Place the logs at once in open piles, either off the ground or under cover in such a manner as to offer the best facilities for the rapid and thorough drying of the inner bark. This will prevent attack by most insects. To insure the maximum amount of protection, however, the logs should be sprayed the following spring when the insects become active. This method is especially recommended where it is desirable to retain the bark on the wood.

The insecticide here recommended, orthodichlorobenzene, may be purchased from the Marshall Chemical Company, Marshall, Virginia; the Hooker Electrochemical Company, 25 Pine Street, New York City; and the Monsanto Chemical Works, St. Louis, Missouri. A typed leaflet on the subject will be sent upon request to the Bureau of Entomology.

FACTORY AND INDUSTRIAL MANAGEMENT

By J. B. Green, Pres. Fusion Welding Corp.

If the questions important to a particular business are solved and standardized, or if there is no one in the business with wit enough to formulate as questions the possibilities that lie beneath the obvious facts, a research department is likely to spend its time laboriously collecting useless information. Usually the answer to one question raises two others, so the department does not lack for work. ****

"This ability to list the right variables is the crux of any research problem. It is the easiest thing in the world to tie up a wrong explanation with an occurrence, to let prejudice and preconception blind one to what is really happening. ****

"We found that all this mass of experimental data usually required mathematical treatment to enable us to interpret it. We had to do a good deal of curve-fitting and formula-making before we could use our results in the definite control of weld properties.****

"If we were lucky, perhaps one idea or principle out of ten might have an immediate commercial application.****

"The ideal research man has a creative, inquisitive mind. He must combine accurate, complete observation with the ability to do philosophic thinking. He must continually challenge his own conclusions. Most people, once a plausible explanation occurs to them, jump at it without further attempt to find out whether it is the right or one not." Clipped by H. T. Gisborne.

THE MEDICINE WHEEL

The Big Horn mountains are found on the eastern side of the Big Horn Basin and west of Sheridan in the State of Wyoming. There are many wonderful peaks in this range, among them being Clouds Peak, Mount Baldy and the Medicine mountain. The last named mountain has an elevation of 9996 feet, but it is not on account of its elevation that it is famous, but because of a wondrous Wheel that lies on the north side of the summit on a beautiful plateau at an elevation of 9000 feet or more.

It is called the Medicine Wheel and is constructed of stones laid side by side forming almost an accurate circle seventy feet in diameter.

Around the rim of the wheel there are six small cairns or monuments about two and one half feet high.

Three sides of these monuments are built up and the other side is left open after the fashion of an arm chair. Five of them have the open side facing in towards the center of the wheel and the sixth one, which is the one on the east, has the open side facing outward toward the rising sun. In the center of the wheel is a hub twelve feet in diameter and around the outer edge is a circular wall two and one half feet thick. This leaves an opening in the center seven feet in diameter.

This was used for some sacred purpose, but nothing can be found to tell what ceremonies were performed within this structure.

There are twenty-eight spokes leading from the hub or center monument to the outer rim of the wheel.

On the outside of the wheel at distances from seventy feet to two hundred and seventy-five feet other monuments are found, but they are all built upon a high point. Other monuments are found always on a high point, some of them being several miles away from the wheel itself.

This mysterious structure has been there for ages and the builders are hidden from view long ages ago.

The Crow Indians say that when they came the wheel was there. The old men of the tribes who roamed over this section of the country say they do not know who built the wheel.

It has stood there for many ages without protection, and parts of the structure have fallen down or have been torn down by persons who have visited the spot.

The forest department of the United States has recently had a rock wall constructed around the wheel and it will be preserved.

ON THE WICHITA

By Charles Allen

Jim Crow had never come in to breakfast before. It wasn't that breakfast was not spread every morning, but heretofore Jim had never summoned up enough courage to venture so close to Headquarters. In this event, being a stranger and black, how could he expect to be received with open arms.

Be it known that breakfast is served early at Headquarters. Nature was in a genial mood that morning and made quite a nice setting. There was a good supply of sunlight glistening on oak leaves. Then there were some soft notes of doves around and higher keyed and more musical song of a red bird and fresh smell of dew dampened grass and all that.

The four magnificent wild turkey gobblers in the office yard did not at all mind taking breakfast with Johnnie Squirrel. But you know what fetching ways squirrels have.

Then too, Johnnie's coat took the sun's rays real nicely. Of course, he had no such variety and splendor of colors for Old Sol to bring out. Anyway, he was a passable breakfast guest. But that crow? Just plain, homely black. Not in their class. Absolutely impossible.

Nevertheless, those oats looked enticing to Jim. Johnnie Squirrel was good natured about it. He just frisked his tail and energetically hopped aside to let the crow pass. Encouraged now. Getting into distinguished company. He crow-footed it on a few steps further.

A big gobbler raised his head, dropped his elastic topnot and suspiciously eyed the intruder. Jim's self confidence dropped six points. He stopped in his tracks. Didn't know whether he wanted to take breakfast with that old grouch anyway. Gosh, what an ugly, pessimistic face he carries. Quite a bit bigger than I am too, and puts up a strong front. Guess I can take to the air in an emergency though.

They just stood glaring at each other for a moment, then Mr. Gobbler extended his long neck forward, gobble, gobble, gobbled and made a center rush. Jim Crow hastily retired to a safe distance and thot it over.

The sun paused in its opaline setting and peered thru an opening in the green decked oaks. More than ever now was Jim doubtful, as he enviously eyed the dazzling display of copper, green, gray, bronze and- Well it just got beyond his narrow intellect. Maybe he was outclassed after all. Stupidly and helplessly he looked on while breakfast was being rapidly cleaned up

He'd try it once more anyway. Cautiously and doubtfully he approached. What hogs those old buzzards were. If he didn't hurry there'd not be a grain left. Jim switched from low to high, ran right in and grabbed up a grain. He got it down but didn't get away with it. The whole bunch of wild turks rushed him and there was nothing to do but take to the air. Slowly he flapped over the oak forest, vowing that hereafter he'd take breakfast with the other crows.

CUTOVER LANDS IN WISCONSIN

An editorial in Wisconsin Agriculturist and Farmer for July 13 says: "Wisconsin has a problem in its cutover lands, formerly clothed with great forests of valuable timber but now being turned back to the counties because of tax costs. These lands grew trees once and they will grow trees again. The chief necessity is to protect them from fire. In a great many localities there are seed trees that will start young growth which will develop into valuable forests. In other localities young trees will have to be planted. Returns from such developments are slow and few investors wish to tie up funds for such a long period of years, but the forest crop law is making it possible for private owners to carry forest lands. The best plan, however, is to turn sizable tracts over to the Federal forestry control for development. In the past there had been a feeling among Wisconsin officials that 'Federal encroachment' was undesirable... Other States do not take this view. They have accepted the assistance of the Federal forestry officials, and State and Nation will profit accordingly. Wisconsin now restricts Federal forestry development to 500,000 acres, but an amendment has been introduced to increase this to one million acres. Chairman Mauthe of the State conservation commission advises that the Federal Government should be permitted to take over two million acres. The State does not seem to be able to develop these areas and put them back into forest production. The Federal Government can. It should be permitted to do so. It is equipped for the job and Wisconsin legislators may wisely make provision for Federal control of large areas of Wisconsin cutover land. Ultimate timber production is delayed with every year that some such constructive plan is postponed."

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people*** Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII No. 32 WASHINGTON, D. C. AUGUST 12, 1929

TECHNICAL GRAZING MEN PASS THE CENTURY MARK

By W. R. Chapline, Washington

Twenty-two years ago the first technically trained grazing men were added to the Forest Service, James T. Jardine and Arthur W. Sampson, a little later C. E. Fleming, W. A. Dayton, and A. E. Aldous. Then in 1911 a slight expansion came, to be followed in 1914 with a considerable enlargement. By 1916, for example, District 4 had about 17 men, including students, working on special grazing problems. The war depleted the ranks and in 1919 it became almost necessary to begin again rebuilding the technical grazing personnel throughout the Service. With the appointments during June from this year's register, however, the men in the Forest Service who have passed the Junior Range Examiner (formerly Grazing Assistant) examination number over 100.

Research has 14, the rest are in administration. Of the latter, District 1 now has the largest number with 19. District 4, which has been first in numbers for some time, now drops to second with 17, although it lost 3 men during the past year and if the vacancies available are filled by men from this year's register it will again take first place. District 3 is third with 16.

Besides Hill of the Washington Office and the 11 or so specialists in the District Offices, 10 of the men who have passed this examination are in Supervisors' positions, 8 are Assistant Supervisors, and 16 are technical specialists on Supervisors' staffs other than the Assistant Supervisors. Most of the other administrative appointees from the examination are in Ranger positions. Of these administrative men only 16 took the examination before 1920. Of the 10 Supervisors, District 6 leads with three, while Districts 1, 4 and 5 each have two. Of the Assistant Supervisors, District 1 leads with three, while Districts 3 and 4 each have two. Of specialists assigned to Supervisors' staffs District 5 leads with five, followed by Districts 3 and 2 with four and three respectively. If the Supervisors, Assistant Supervisors, and staff Specialists are grouped together, District 5 is first with 8, while District 1 and 3 are close seconds with 7 each.

The question is often raised as to whether the examination is useful in indicating a man's ability. While there is no question but that some men are able to handle an examination more adequately than others, an analysis of the development, advancement, and work of the men who have taken the examination for Junior Range Examiner may be of interest. This analysis is based on the eligibles from 1915 to 1926, both those who have remained with the Service and as many as possible of those who have left the Service. Opportunities were such for those entering before 1915 that all have had a much better than average chance to advance. Most of those who have entered since 1926 have hardly been in long enough for the record to show real appreciation of their ability. It has been necessary also to rule out of consideration those for whom the record is not clear or whose work is not well enough known by the author to be rated, or who remained in the Service for so short a period that the record is not clear. The men were classified into four arbitrary grades; (1) exceptional, (2) better than average, (3) average, and (4) below average. In connection with this classification it has been expected that all should make reasonable progress both in promotion and responsibility to be classed as average.

Each eligible list was divided on the basis of actual grades into first and second halves. Of the 53 men who were in the first half of their respective lists and who could be rated, 11 or over 20 per cent have proven exceptional, 28 were classed as better than average making 39 (including the 11 exceptional men) or nearly 74 per cent than have proven better than average. Twelve others were classed as average making 51 or about 96 per cent who have proven average or above. Only two who fell in the upper half proved to be below average. Of the 47 ratable men who were in the second half of the list 2 or 4 per cent have proven to be exceptional. Fourteen of the lower half men were classed as better than average which with the two exceptional men gives 16 or 34 per cent better than average. Fourteen were classed as average making a total of 30 or 64 per cent average or above. The rest, or 17 of the lower half men, were below average in accomplishment. Most of the men in the second half had actual grades below 70, securing their eligibility through military or disability preference.

The question may be raised as to whether technical grazing men have on the whole proven above average as these percentages would indicate. The advancements given many of the men appear to bear this out. Doubtless one of the most important factors in connection with this has been the demand for men with a range management training and the fact that most of the men entering from the examination, until recent years, were given at least a year of grazing reconnaissance and management plan development experience under a trained man. Another important factor has been the personal interest shown in the development of these men by the grazing men of the District offices and the close inspection and encouragement given to them in their work, particularly in their early years in the Service. Another factor has probably been that a rather large number of the men taking the Junior Range Examiner examination had previously entered the Forest Service as Rangers from the Junior Forester or Ranger registers and were encouraged to take the examination by the range management possibilities they recognized.

THE RELATION OF FOREST VALUES TO THE PROTECTION PROBLEM

By L. L. Colvill, Deschutes

Just how much dependence should be placed upon Forest Values as a determining factor in distributing our protection force?

Based upon tabulations prepared recently for the Deschutes National Forest, it is my opinion that this factor of values is at best only a contributing factor and should be given secondary consideration when distributing your men for fire protection purposes.

The first consideration should deal with fire risk. Only after we have carefully measured our forest units as to the amount of fire risk involved should we consider the timber value. I grant that if two units have about the same amount of fire risk, then it would be good business to so distribute our men as to give added protection to the units having the greatest value.

Here on the Deschutes it is felt that we should spare no effort to put out a fire with the smallest acreage possible irrespective of its location. With that in mind, it would seem that our safest policy in distributing our fire protective resources should be based upon the past fire history together with careful analysis of future considerations.

I concluded after analyzing this table of timber values by ranger district, that one must approach it with prayers and fasting for it is apt to be misleading when viewed from a fire standpoint.

For those who might be interested, the values by ranger districts as computed for the Deschutes National Forest are as follows:

	SISTERS DIST.	LA PINE DIST.	CRESCENT DIST.	FT. ROCK DIST.	TOTAL
Commercial Forest	$6,699,088	$3,396,519	$5,411,785	$4,173,817	$19,681,209
Reproduction	58,476	84,967	75,287	10,623	229,353
Protection Forest	466,594	541,428	649,081	635,940	2,293,043
TOTALS	7,224,158	4,022,914	6,136,153	4,820,380	22,203,605

Note: All figures are based upon Damage Appraisal values as submitted by the D. O.

The compilation of this table has produced two beneficial results. 1st. It is of value to the forest personnel in enabling them to better visualize the timber resources of the forest. Especially is this true in the case of the Central Despatcher, who, because of the nature of his work, must necessarily gather much of his information of the forest in this way. 2nd. To the Rangers concerned, it has produced a feeling of prosperity and responsibility which has manifested itself by the voluminous work plans they are submitting.

THE INYO GRAZIMETER

By C. M. Gwin, Inyo

It is hard to present a word picture of the "Inyo Grazimeter" but I will do my best. Here is a sample, showing 1929 rates, for sheep, ultimate fee 5.5¢ a month, old fee 35¢ yearlong:

	1½-mo	2-mo.
1	.07	.09375
2	.14	.18750
3	.21	.28125
4	.28	.37500
5	.35	.46875
6	.42	.56250
7	.49	.65625
8	.56	.75000
9	.63	.84375

The numerals on the left are on a moving slide, so that you can slide it over to the proper column for quick reference and reduce chance of getting wrong number.

In preparing the table, get the rate for one head in the prescribed manner. Then keep adding the fee for one head until you get down to 9. Then multiply the fee by one head to insure that you have not made an error in addition in going down the line. It is really not much of a job to prepare it. Our "Grazimeter" has 36 columns on it. By single-spacing, and using both sides of the card, with the movable slide "oriented" so that it is always "on line", was able to get all this on a card 4" × 8½", which is a convenient size to manipulate.

To compute the fees on 1000 sheep for the 2 month season, for example, you simply take the rate for one and move the decimal point three places to the right, obtaining $93.75. On 200, take rate for 2 sheep and move point two places, obtaining $18.75. To get the fees on 1543 head:

1000 - 93.75
500 - 46.875
40 - 3.75
3 - .28125
144.65625, or $144.66

The table should include the periods in common use on the Forest concerned, and in the blank space above the months can be put the inclusive dates of the periods.

Of course, until 1931, it will be necessary to prepare a new table each year. After that the same table will serve until a re-appraisal changes the rates.

All the "Grazimeters" in District 5 will be obsolete now. If Grazing thought it worth while, possibly some of them could be gathered in and routed around to other Forests that might be interested.

WE "TAKE STOCK" IN MEN

"I don't take much stock in him", is a familiar phrase of disapproval.

But the investor is more and more "taking stock" in men. He buys shares in a manufacturing company not solely because of its tangible assets, nor because of its impressive balance sheet, but because of the quality of the men who are in control.

Said one business man to another:

"If I were you I'd buy some stock in the So-and-So Company."

"Why? What do you know about it?"

"Nothing much", was the frank answer, "but I've just been talking to the new president and he's the kind of man you feel sure will make a go of anything he undertakes."

The particular stock measured by the yardstick of stock-exchange prices has justified the first man's faith. It has shown a steady appreciation.

We do today quite literally "take stock" in men. The investor is largely moved by his faith in management. Almost any one of our readers can think of a man or men in whom he would gladly "take stock".

More and more we are learning of the value of management and learning that it is the first syllable that must be accented. Editorial, "Nation's Business", May 1929. Clipped by D. 6.

THE OZARK GETS A TRUCK

By L. F. Kneipp, Washington

As a prelude to the more exact definition of the future Clarke-McNary Purchase Program, a further canvass of the southern pine situation was eminently desirable. Besides, Ashe was becoming so strongly opinionated in the subject that it seemed desirable to take him for a ride. The plan of work therefore provided for an extended tour of observation of the southern pine belt by Kneipp and Ashe, which involved the all absorbing problem of transportation, since railroads and bus lines do not adequately penetrate the piney woods which were to be visited.

At the crucial moment, Koen made a very convincing showing of the need for a light truck on the Ozark Forest, which developed a brilliant idea; - buy the truck in Washington and let Kneipp and Ashe deliver it to the Ozark via the southern pine belt. Thus, on the morning of May 20, a spick and span Ford ½ ton truck or pick-up wagon stood in front of the Atlantic Building, with only the figure 7 showing on its otherwise virgin speedometer.

For 32 of the ensuing 35 days (3 days being spent in accompanying persons who preferred to drive their own cars) that truck was busy, and when it rolled into Hot Springs National Park, Arkansas, on the afternoon of June 23, its speedometer recorded a total elapsed mileage of 5,543 miles, or an average of 173 miles per day of actual travel. Down through Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and finally into Arkansas, it purred its busy way; not only over roads that were hard surfaced or smooth; but also over roads which, while graveled, were corrugated like washboards, roads that suddenly converted themselves into watery aisles winding indefinitely among the trees, and roads that had seen better days so far in the remote past that only a slight semblance of their former state could be discerned.

Two punctures, a lost hub cap, and a broken hanger for an emergency brake shoe, were the total casualties for the trip, and after a wash, polish, steam cleaning of the engine, and regular Ford check-up at Hot Springs, the truck showed little evidence of impairment of its pristine beauty or smoothness of operation. Incidentally, not one of the 711,313 pickaninnies, mules, cows goats, razorbacks, geese, chickens, et al, encountered along the way was bumped either into or off, and one mild admonition anent a one-way street was the only traffic jam experienced. The invariable parting comment was "Come back and see us again" or else "hurry back". The South is both hospitable and courteous to the motorist.

The adaptability of the Ford pick-up wagon to National Forest field use was amply demonstrated. In the woods it handled with the ease of a cutting pony and the power and sureness of a cottonfield mule. On the open road it trailed along with the rest, readily confirming all of Henry's allegations as to its ability to travel smoothly and comfortably in fast company. Its cab gave absolute protection during three days of heavy rains, and there are few other cars in which two persons could ride with less discomfort during 32 almost consecutive days of travel. As for style, it repeatedly drove right up to the front doors of the leading hotels in some of the Southland's proudest cities, without being shooed away, or the bell-boys showing any hesitancy in leaping for the baggage. Its use as a vehicle of transportation did not seem to entail any evident ostracism or impairment of social or official prestage.

One development of the trip was the addition to the list of Forest Service speed artists of "Cannonball" Ashe, the demon driver of District 7; who started the tour with many pointed suggestions as to conservative rates of speed, and a cool aloofness to navigational functions, but eventually succumbed to the allure of the steering wheel and crashed the speed limits of at least two States. Another interesting development was that the majority of the Forest officers visited, instead of being called on to furnish and drive cars for the transportation of the visitors, had the unique privilege of being passengers and honored guests, with unquestioned first choice of the improvised rumble seat, where the clearance was better, when Ashe was driving.

SIWASH SIGNAL SYSTEM

By L. J. Cooper, Siskiyou

While constructing the Elk River Trail along the divide between the Sixes and Elk Rivers last summer, on the Siskiyou Forest, the trail crew uncovered an old Indian signal pit. Part of one side of the pit had fallen in but the rest of the pit was intact.

It had been made by hollowing out a place about three feet wide and five feet long, then lining it with a layer of rock from four to six inches thick. The work was crude but undoubtedly well done as attested by the fact that it was still in good shape though many years had passed since it had thrown off a smoke puff.

Foreman Edwards and some of the crew cleaned out the pit which was full of moss and leaves, replaced the fallen rocks, and put up a sign to call the attention of the mountain traveler to the ancient Indian communication system. The new trail runs within a few feet of the pit.

A striking characteristic of this, and other pits in this region, is that they were so located that smoke signals could be seen from one pit to the other but more or less hidden from the surrounding country. Instead of being placed upon the most prominent points, they were placed in their shadows, so to speak. The Indian signalman could see to the next connecting station through low passes and across low country but his signals were somewhat cut off from the rest of the country.

I have been told that there are pits near the south end of Iron Mountain and near Bald Knob. Apparently these two pits tie in with one that was found last summer, as they are near and visible from the old Indian encampments at what is now Eckley, Agness, and Illahe.

No doubt the Indians used as much care in locating their stations as we use when locating a lookout station.

SPECIAL COMMITTEE APPOINTED ON RANGE PROBLEMS AND POLICIES

A special committee of Department specialists has been appointed by Secretary Hyde to consider range livestock problems and research. This committee will review all projects bearing on range livestock production and will present a program for the cooperating bureaus. It is expected that proper means of preventing erosion through control of runoff and the study of stock poisoning by plants will be given special consideration. It is for the purpose of developing a proper policy of land use and promoting effective cooperation by all branches of the Department that this committee has been appointed.

E. W. Sheets, chief of the animal husbandry division, will serve as chairman of the committee. Other representatives of the Bureau of Animal Industry are: V. V. Parr, in charge of beef cattle investigations in cooperation with western range States; D. A. Spencer, in charge of sheep and goat investigations; Dr. C. Dwight Marsh, the department's principal authority on stock poisoning by plants; Dr. C. D. Lowe, extension specialist in animal husbandry; and W. H. Black in charge of beef cattle investigation.

William R. Chapline, inspector of grazing in charge of range research; and C. L. Forsling, director of the Great Basin Experiment Station, Ogden, Utah, will represent the Forest Service.

Bureau of Plant Industry representatives are: E. C. Chilcott in charge of Dry Land Agriculture; John M. Stephens, supervisor of the northern group of field stations, with headquarters at Mandan, N. D.; and Johnson T. Sarvis, associate agronomist at Mandan.

The Bureau of Agricultural Economics representatives are: Dr. C. L. Harlan, senior statistician, crop and livestock reports; C. G. Randell, agricultural economist, specializing in economic cooperation; J. K. Wallace, market specialist in livestock standardization; and H. N. Homes, market specialist at Omaha, Nebr.

YE EDITOR DISCOVERS

The Superior Forest in D-9 is advertising a sale of nearly half a million dollars worth of timber. The estimated volumes include 212,000 cords of jack pine pulpwood, as the chief item, with spruce, balsam fir and aspen pulpwood, white pine, Norway pine, spruce and jack pine sawtimber, and "birch bolts" as secondary materials. The taking of cedar products and the hewing of birch or jack pine ties are to be optional. Advertised rates include $1 per cord for jack pine and balsam pulpwood, $1.90 per cord and $3.75 per M for spruce, $5 per M for white pine, $4.50 per M for Norway pine, and $.25 per cord for aspen and birch. It looks as if the Superior will have a large business in small timber.

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Here is a case of voluntary cooperation that deserves some mention. Luther Fowler, editor and publisher of the Shelby County Reporter, the "only paper in Shelby County, Alabama," writes in to tell us that "in our county there are thousands of acres in woods and we have been having too many fires."

"There seems to be the beginning of a realization on the part of some of our people that burning the woods does not pay," Fowler says. He wants to do something to carry forward that realization, and consequently his paper will feature, in installments, the full text of our Leaflet No. 40 on "Woodsburning." He also has asked us for 500 copies of the leaflet to distribute where he thinks they will do real good

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Fred B. Merrill, formerly Assistant State Forester of Georgia, has been appointed State Forester of Mississippi, effective August 1.

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E. A. Ziegler, formerly director of the Pennsylvania State Forest School, has joined the Forest Service and has been placed in charge of a study of the financial aspects of private forestry practice. This study is being begun in the South, with Doctor Ziegler assigned to the staff of the Southern Forest Experiment Station.

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F. P. Keen, of the Palo Alto, California, forest insect laboratory of the Bureau of Entomology, is being placed in charge of a new laboratory established by the Bureau at Portland, Oregon. J. A. Beal, entomologist at the Appalachian Forest Experiment Station is being transferred to the new laboratory.

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E. M. Bruner, District Forest Inspector for the Central States, is in Washington on a month's detail to PR. Bruner will work on area and costs reports and assist in State Cooperation.

FIRES KEEP FOREST CHIEF FROM PARLEY

Albin G. Hamel, Supervisor of the Superior National Forest, was expected to be in Duluth Thursday to explain to a congressional committee the need for forest fire prevention in the north woods. But he was prevented by forest fires from meeting the congressmen. Seven fires, it was reported, were burning in the northern region. Mr. Hamel was on the job, directing the work of suppression. It was a case, the congressmen said, in which Mr. Hamel's diligence spoke more effectively than words. - From St. Paul Dispatch, July 19.

THE PASSING OF THE LEADVILLE

By F. R. Johnson, D. 2

The Old Leadville Forest is no more and with this announcement there will doubtless be many feelings of regret on the part of Forest officers who have been assigned to this Forest of majestic mountains with its 16 peaks over 14,000 feet in elevation and with its mining towns of bygone days, such as St. Elmo, Kokomo, Montezuma, Alma, Fairplay, Breckenridge, Dillon and, perhaps, Leadville. Some of these towns continue a precarious existence with, now and then, the rumor of a big strike. Usually it is only a rumor and most of these places are living in the past.

The Leadville was proclaimed on May 12, 1905, and it existed as a separate unit for slightly over 24 years. It passed out of the picture on June 30 with the closing of the Leadville office when the Forest was dismembered and portioned out to the Arapaho, the Cochetopa, and the Pipe. A perfectly good suite of rooms, on the second floor of the Federal Building, may now be used by the District Ranger who will continue to have headquarters there. Doubtless there was not much regret on the part of most of the officers who have been stationed at Leadville for the altitude is high, 10,200 feet above sea level, the climate is cold and there is lots of snow and there are always depressing influences around a decadent mining town.

Supervisors who have served on the Leadville include A. L. Stroup, Theodore Shoemaker, R. E. Clark, H. L. Borden, A. Hutton, L. R. Rist and A. L. Nelson. Rangers Frame and Heaton are the only officers left of the old Leadville regime and both are now assigned to different Forests, Frame to the Cochetopa and Heaton to the Arapaho. Doubtless they will find it difficult to write the new forest names after so many years of writing "Leadville".

MARSH RESIGNS

S. H. Marsh, District Forest Inspector for the Southeastern States, has resigned from the Service effective August 25. He has accepted the position of Vice President and General Manager of the Ford Motor Company at Staunton, Virginia. Marsh entered the Service on July 1, 1911. For 15 years he served as Supervisor of the Shenandoah Forest.

Hank's departure is a loss and will be felt by all of us who have worked with him. He not only knew his stuff but charmed everybody with whom he came in contact inside and outside the Service by his genial disposition, his tact, and his keenness for essentials.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

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Vol. XIII No. 33 Washington, D. C. August 19, 1929.

SO FAR SO GOOD

By W. J. Perry, Deschutes

In the spring of 1928, some ten acres were planted to yellow pine on the Deschutes Forest in cooperation with the Pacific Northwest Experiment Station, to test the adaptability and survival of plants from other Forests, and also to compare them with stock grown from seed collected on the Deschutes.

This plantation is located on The Dalles - California Highway, some nine miles south of Bend, on non-restocking, cut-over land. The whole area is fenced with woven wire and the interest it is arousing among the motorists is amazing. As an example, we have in mind an experience that a townsman recently told us about. It seems that every time he drove out of town, which was quite often, he noted the neatly fenced area and when he returned home it showed up even more strikingly. Each time he passed the area, he wondered "What on earth is held captive in that enclosure?" It finally beset his mind in such a way that he dreamed of the plot at night and thought of it by day until he was near mad, and so to save his family and neighbors from hydrophobia he made a special trip of inspection.

We are proud of this plot, and also have in mind the welfare of our people, so much so that we hope the experimenters will mark it with a real BIG SIGN that can be read at 50 per.

And now comes the big story. We announce with pride that our "babies" in this experiment, after being out in the cold world and the hot sun for a year, are doing better than all the others. Just look at the records which the Experiment Station made following the examination last month.

Forest	Per Cent Survival	Forest	Per Cent Survival
Deschutes	76	Crater	50
Lassen	74	Coconino	50
Eldorado	73	Harney	39
Carson	52	Bitterroot	39

MEASURING PUBLICITY BY COSTS AND RESULTS

By C. E. Randall, Washington

By such varied and roundabout ways does our educational work operate that it is difficult to trace its progress. We see the results usually in broad perspective. But when we fire a broadside of educational effort at some objective it would often be helpful to know which particular shot hit the bull's-eye.

Some light on the relative effectiveness of the numerous methods employed in educational work might be found in a study recently completed by M. C. Wilson of the Department's Extension Service. The Extension Service is engaged in selling new ideas on farming and homemaking, and consequently, the adoption of an "improved practice" on a farm through some extension influence is considered a direct and tangible result of educational effort. In his study, Mr. Wilson attempted to determine the influences which led to the adoption of 27,032 improved practices on 8,738 farms in 12 States.

Methods classed as publicity, he found, were the cause of the adoption of 30 per cent of the total number of improved practices. The remainder of these practices were adopted as a result of personal service methods, object lesson methods, and indirect influences, these three groups being about equally influential. In the publicity group which includes such mediums as news stories, bulletins, circular letters, posters, exhibits, general meetings, and radio, the printed or written word proved strikingly effective. News stories, bulletins, and circular letters caused the adoption of 18.32 per cent of all practices involved in the study, the news story alone being credited with 13 per cent of the changes. The effectiveness of some of the various methods as shown in the percentage of practices adopted was as follows:

Method demonstration	19.29
General meetings	17.54
Farm or home visits	15.68
News stories	13.05
Office calls	8.57
Bulletins	8.28
Adult result demonstrations	5.26
Junior result demonstrations	3.21
Circular letters	1.95
Correspondence	1.56
Leader training	1.17
Extension schools	.97
Exhibits	.78
Telephone calls	.49

In this tabulation, indirect influences, which by the farmer's own statements, accounted for more than 20 per cent of the changes, are not taken into account. It must be remembered also that the farmer's word as to what made him alter his practice cannot be taken as absolute. Take, for instance, the "office calls". It is probable that every farmer who made a call at the extension man's office had his interest previously stimulated by some other agency - exhibits, radio, news stories, or a combination of these. Perhaps the "office calls" could properly be distributed among the other influences, if the basis of distribution were ascertainable. Because of their newness in the field, the motion picture and the radio have not been considered in this tabulation, although their effectiveness as educational mediums is strongly attested to by their increasing use in commercial and other publicity.

Interesting also was Mr. Wilson's analysis of the relative cost in time and money of various educational methods. For instance, demonstrations, which brought over 19 per cent of the improved practices, cost approximately 19 per cent of the total educational program. News stories, accounting for 13 per cent of the results, took only some 4½ per cent of the cost. When all costs in time and money were considered, the news story was found to be the most economical means of influencing farmers and farm women to adopt the desired changes. Improved practices adopted per unit of cost for some of the various educational methods were found to be as follows:

News stories	2.79
Circular letters	1.83
General meetings	1.72
Office calls	1.56
Bulletins	1.40
Visits	1.13
Leader training & method demonstrations	1.04
Result demonstrations	.47
Personal correspondence	.45
Exhibits	.18

Although Mr. Wilson's study indicates that the news story is the most effective means of getting results per unit of cost, it does not follow that other methods can be neglected. Were we to devote our entire effort to new services and the like, it would probably result in decreased returns per unit of cost. Personal service methods, such as demonstrations, are here shown to bring the highest percentage of returns, and it would seem that whenever the desired objectives warrant the cost, these methods would best make our shots tell.

Mr. Wilson's study also does not, and could not, take into account the unmeasurable but great and important indirect influences of the various forms of publicity. It is impossible to tell what indirect influences were back of the direct results - to what extent and by what means the way was paved for the adoption of the specific practice. Probably back of every changed practice was an intangible suggestion, thought-stimulation, breaking down of resistance, and building up of good will, in which some other form of education might have played a part. A large amount of our publicity is, and should be, directed toward foundation-building of this sort. Exhibits, for instance, which rank relatively low in direct results in the Wilson study, probably would rank high in indirect influences.

To get back to our original metaphor, by firing a broadside we are most apt to score a hit. Every educational method we have at our disposal is needed. It might be wise however to place as much emphasis as circumstances permit upon those methods which yield the largest returns upon money and time invested. Certainly these low cost publicity methods should not be minimized or overlooked.

WORK STARTS UNDER GAME RESEARCH FELLOWSHIPS

A study of the cyclic fluctuations of ruffed grouse was started June 1 by the University of Minnesota. The work will be under the direction of Dr. Royal N. Chapman.

A study of the environmental relations of quail was started July 1 by the University of Wisconsin. The work will be under the direction of Dr. Leon J. Cole.

Both projects are supported by research fellowships established by the Sporting Arms and Ammunition Manufacturers' Institute, and will be under the advisory supervision of H. L. Stoddard of the U. S. Biological Survey. Ralph King has been appointed as fellow in Minnesota and Paul L. Errington in Wisconsin.

Both projects will bear an important relation to forestry. The quail problem in Wisconsin is believed to be almost synonymous with the problem of woodlot cover. The grouse problem is closely related to forest cover, and possibly also to forest enemies such as the snowshoe rabbit, which likewise displays cyclic fluctuations, and which may prove to have the same disease or parasites as grouse.

The idea behind both projects, according to Aldo Leopold, who is in charge of the Institute game program, is not only to develop the life history facts basic to the production of game crops, but to correlate the management of the game crop with that of the forest and farm crops obtainable from the same land.

WHY WRITE?

Recently while at a Ranger's office there came to my attention an interesting article issued by the Forest Products Laboratory. Attached to it were four letters of transmittal - one from the Laboratory to the Forester, another from the Forester to the District Forester, a third from the District Forester to the Supervisor, and still a fourth from the Supervisor to the Ranger. Each suggested that here was an interesting article which ought to be read. It was well advertised, if circulars really advertise such things, but one could not help wondering whether the Service had definitely passed from the stage where the clerk was too busy to do more than slap on such an article the stamp "For information" or "For action." Maybe we will yet get to the stage in this advertising age where the Forester will issue a circular which each copy of the Bulletin saying something like this:

"Gentlemen:

> Attached is the current issue of the Service Bulletin. It is submitted to all members of the Forest Service in the hope that it will be read. The Editor has worked hard and has really compiled a very creditable sheet which should be of considerable interest."

This might be followed by another circular from the pen of the District Forester stating:

"Forest Officers:

> Attached is the Forester's circular of__________1929 together with the current issue of the Service Bulletin. You will undoubtedly find the Bulletin of considerable interest. The Forester's office will publish the Bulletin each week and it is suggested that you read it from cover to cover as it contains a lot of good stuff."

And so on; but why continue. Seriously though, is it not time to check up on letters of transmittal to see how many really mean anything? - J.C.K.

NEW YORK WANTS FORESTERS

In connection with an enlarged reforestation program, the New York State Department of Conservation will need the services of four or five District Foresters in various parts of the State. An examination of candidates for these positions will be held within the near future. It will be open only to men who are graduates of a school of forestry offering not less than a two year course of training in forestry and who have had two years satisfactory experience following graduation from a forest school. The salary of these various positions will be $2500 per annum to start. Applications should be filed with the State Department of Civil Service, Albany, New York.

A COMPLIMENT TO GOVERNMENT WORKERS

(From "A Certain Mountain Chief," by Struthers Burt,
Scribner's Magazine, June 1929).

"Not long ago an Englishman, a very intelligent one, and one who has lived in this country twenty years and so has a sympathetic point of view, after a number of national compliments, made the inevitable complaint that perhaps the most serious fault of the United States was that the best men did not go into the government service. He meant especially into politics, but his remark was comprehensive. I did not challenge it. It is too common a remark to challenge, except possibly in print. It is a remark, as well, made by eighty out of every hundred Americans. Partly it is the result of ignorance, but largely it is the result of a tradition and the fact that most people see what they are looking for. Such premises are difficult to destroy unless you have plenty of time and space. Until recently the temper of the world has been tory and aristocratic; it stands to reason, therefore, that democratic governments have come in for more than their fair share of condemnation. They are bad enough, but they are not half so bad as people think them. At all events, whenever this remark is made, I laugh to myself, because I happen to know Albright and numerous other government men. Laying aside the truth that even the political side of our government averages fairly well up, both in performance and personnel, with the political side of other governments, when you come to higher endeavor, to a higher stratum of men -- to wit, the expert, the scientist, the departmental chief -- you have probably as fine a type of man as you can find and as unselfish a one.

* * * * * * * *

"If you wish to restore somewhat your faith in your own country, go down to Washington, or out into the field, and study for a while our government bureaus at work. Here are unselfish men, directed by clear and bright burning passions."

LOCALIZING WILD LIFE PROBLEMS

Wild life must have the aid of human guidance in our present day and the Forest Service comes in for a large share of responsibility. The regulations provide for it and outline policies; wild life handbooks attempt to define the relative position of wild life and other National Forest resources and uses. Under these statements of policy each locality presents its own problems; a decision on the Pike Forest would not necessarily apply to Jackson's Hole, nor to the Wichita; a decision for the Kaibab would not be pertinent perhaps to the Wind River country.

On the other hand, each situation should be analyzed and facts procured as a basis for decisions or priorities, such as the investigation made by the President's Outdoor Recreation Conference a few years ago of Jackson's Hole. As a result of that investigation, agreement was reached by all parties at interest that game, recreation, and livestock had certain relative positions Objectives were agreed upon and set up stating how far each could go or should be recognized. This is the only logical way to reach proper decisions, it seems to me, when various important interests are involved and which may be more or less complicated or antagonistic beyond a certain point. I do not think with such studies of each important situation there would be question about which interest would or should be given most prominence. It is not usually hard to convince fairminded men, even though they may be interested in a particular activity, if facts properly accumulated and presented are before them.

So it is with all the larger Forest resources and activities. As far as wild life and recreation are concerned, the stated policies and regulations of the Forest Service which are working guides give these questions permanent and relative place among the different Forest resources. As a Service, we have a pretty large part and responsibility in determining relative priorities as they concern the National Forests and perhaps certain of the adjacent territory. At least we have this responsibility in helping to work out and determine priorities. We are well set to go forward under our announced policies with the assembling of proper facts and where important decisions are necessary; and if these facts are rightly interpreted we will carry our part of this wild life and recreation responsibility. Personally, I have not much fear for proper conclusions if each situation is approached with an open mind and the facts themselves are used in reaching decisions. - John H. Hatton, (June issue of D-2 Bulletin)

The wide interest in wild life and the constructive thought being given to various phases of the management of this forest resource on District 2 is strikingly illustrated by the following six articles written by Forest officers in the Rocky Mountain District that appeared in the March 1919 issue of the Journal of Forestry:

Wild Life Administration	John H. Hatton
Are we Drifting into European Systems of Game Management	Theodore Kruger
Relation of Land Ownership to Ownership of Wild Life	George A. Duthie
Winter Game Range	Wallace J. Pearce
Fur Farming	Fred B. Agee
Fish Propagation	Ray Peck

YE EDITOR DISCOVERS

Forest fire expenditures for July were $65,828 more than for that month last year. Districts 3 and 6 are the only Districts that did not spend more.

The outlook for August is unfavorable. Districts 1, 5, and 6 have reported numerous lightning fires early in the month. District 1 reported 7 fires uncontrolled on August 3, the largest covering 700 acres. District 6 reported 6 fires uncontrolled on August 6; also reported that lightning had started 400 fires during first five days of the month. District 5 reports all fires controlled. The last reports on the Brule Lake fire on the Superior indicate that it is still uncontrolled. Estimated cost so far, $18,600.

Expenditures for the calendar year up to July 31, 1929, are $274,887, or roughly $7,000 less than expenditures for the same period in 1928. Leaving out District 7, which had a bad spring season last year, expenditures in 1929 run ahead of last year's expenditures by $24,231.

Judging from expenditure figures alone the spring seasons were about the same in

1928 and 1929 in Districts 1, 3, 4, 5, and 8. The spring season in 1928 was much worse than the 1929 season in Districts 2, 6, and 7.

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J. Reynard, writing in Bois et Resineux, attributes the Graf-Zeppelin's failure in its attempt at a second transocean flight to the mistral, and proceeds to discuss the origin of this northerly wind that blows across central France. Says Mr. Reynard.

"The Greek historian Alexander affirms that the mistral was unknown in Provence before the deforestation of the Cevennes. **** The difference between the climate in the South of France and in the Northwest creates a permanent air current, which traverses the central plateau. So long as this plateau was normally forested the speed and violence of this wind was no more than is usual in cases of such atmospheric displacement. But after the deforestation of the plateau and of the valleys of the tributaries of the Rhone, the air passing through these defiles was compressed forcibly between the denuded mountains and emerged in the valley of the Rhone and in Provence blowing at the rate of 80 kilometers an hour. It was against this wind that the German Zeppelin was unable to make headway."

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A recent statement by the Associated Press contains the following:

"As soon as some pressing tasks have been disposed of, the Federal Farm Board intends to inquire carefully into the whole problem of land utilization, condemnation and reforestation.

"This field of study is regarded by the board as holding an important key to the solution of agriculture's difficulties but just what will result from its inquiry can hardly be forecast."

"One important phase of the study will concern itself with reforestation."

"Many students of the farm problem have advocated turning the less desirable land into new forests and Congress specifically charged the Farm Board with the job of inquiring into this subject."

"WATTS WATT" APPROVES

The above named leaflet issued by the Portland Electric Power Co. and distributed in Portland's street cars, heartily endorses our Smoker's Code (quoting it in full) in its issue of May 24. It says, in part: "When the United States Government rises and says things to us, we try to be good citizens, and tell Uncle Sam to give us the low down and we will be with him. *** All this has to do with protecting our Oregon forests. Herbert Hoover, the original Oregon boy, has had one of his bright young boys send us some doleful literature about burning up the woods. This list of cautions indicates that those ladies and gentlemen who smoke cigarettes, cigars, pipes, and other combustibles should cooperate with the Government.***

Let's all be good sports and cooperate with Uncle Sam in this laudable work. If we desired to be selfish we might add that a forest fire of any substantial proportions could easily put some of the P. E. P. Company power plants out of business, which would be directly reflected in impaired service to our customers. We don't want that to happen, neither do you. Let's all pull together." - District 6.

MORE ABOUT SMELTER DUST AS A WOOD PRESERVATIVE

The July 8 issue of the Service Bulletin quoted extracts from a letter from the Forest Products Laboratory, dated April 23, 1929, in reference to the suitability of smelter dust as a wood preservative for posts and poles. This material is known as Anaconda Wood Preservative and is being marketed by the Anaconda Copper Minning Company. Considerable interest has been shown in this country in this chemical, which consists mainly of arsenic trioxide, and the Forest Products Laboratory is in close touch with numerous installations of poles and posts where it has been used. While the information gathered to date on such experimental timbers, most of which have been in service for only a comparative short time, is in general favorable to the Anaconda Wood Preservative, the Laboratory feels that it can not pass final judgement on the effectiveness of smelter dust as a wood preservative until such material as has been treated with it has been in service for a longer period of years.

WESTERN STATES HIGHWAY OFFICIALS MEETING

By G. H. Lautz, Washington

The Western State Highway Officials met at Boise, Idaho, July 8 and 9. Representatives were present from all the 11 Western States. Bureau of Public Roads, National Park Service, and Forest Service. The latter was represented by District Forester Rutledge. District Engineers Thieme, Brownlee and Martin, and Assistant Chief Engineer Lautz.

A number of very interesting papers were read, one of which had been prepared by Mr. Rutledge. The Association endorsed the two road bills, S. 121 and S. 1486, without recommending any changes but appointed a committee which was to consider changing the language of the bill and reporting to the State Highway Officials meeting which takes place at San Antonio in November.

A motion was passed to hold another meeting of the Western representatives next summer. The District Foresters and District Engineers at Albuquerque and Portland have been included as Forest Service representatives.

GRAVES VISITS D. 2

Henry S. Graves, Dean of the Yale Forest School, spent the first several days of August in Colorado conferring with members of the District office and Professors W. J. Morrill and Gordon Parker, heads of the forestry departments of Colorado Agricultural College and Colorado College.

Professor Graves is on a tour of the West in connection with the study of forestry education which is being conducted by the Society of American Foresters, and for which a gift of $30,000 was received from the Carnegie Foundation. Colonel Graves is Chairman of the Committee which is making the investigation. Several educators of considerable prominence in other lines will assist in the study. Among other things, the committee will consider changes necessary to make forestry education conform to present day conditions. - District 2

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII, No. 35 WASHINGTON, D. C. SEPTEMBER 2, 1929

LOST IN FOREST FIRE

Douglas C. Ingram of the Portland office and Ermannie Saint Louise, a temporary employee, have been lost in a forest fire on the Chelan since Tuesday, August 13. A constant search has been made for these men by fire crews, but the chance of finding them alive is beginning to be regarded as slight. As the Bulletin goes to press sixty men are engaged in the search.

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Word has just been received that Ingram's body was found at 8:30 the morning of August 24.

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SETTLEMENT OF KAIBAB DEER PROBLEM IN SIGHT

The Kaibab deer problem appears to be on the road to satisfactory solution, according to information received from District Forester R. H. Rutledge of the Intermountain District at Ogden, Utah. An agreement has been reached between the Forest Service and the Arizona Game and Fish Commission providing for a plan of action which may eventually solve the deer problem on the Kaibab Forest. The agreement indicates that the State Fish and Game authorities, working under the provisions of the new game code are attacking the problem in a business-like way and in doing so are cooperating fully with the Forest Service, Biological Survey, and the National Park Service. The agreement with the Game Commission was made possible under Section 4 of the Arizona Game Code which reads: "The Commission may enter into cooperative agreement with any Federal department having jurisdiction over any federally controlled lands in Arizona in carrying out such rules and regulations as may be established by such Department for the protection and perpetuation of game animals thereon."

The essential features of the agreement are: (1) that the open hunting season on the Kaibab shall extend from October 1, 1929, to December 15, 1929; (2) any person hunting deer within the Kaibab must have an Arizona hunting license in his possession; (3) any person entering and desiring to hunt deer on the Kaibab will be required to obtain a permit from the Forest Service at a cost of $1.50 (this goes into a cooperative fund to be used to defray a portion of the expenses incurred in handling hunting on the Forest); (4) each holder of an Arizona hunting license and a Forest Service permit may take not more than two deer, only one of which may be a buck; (5) killing of deer under this agreement shall be confined to areas designated on the Kaibab; (6) no carcasses, hides, or detached heads shall be removed from the Kaibab until they have been tagged by game wardens appointed by the Commission. - D. 3 News Item

SWEDISH GANGS INSTALLED IN WASHINGTON MILL

By H. M. Johnson, D. 6

Perhaps one of the greatest handicaps to the closer utilization of the timber resources of the Douglas fir region is the problem of the small log. It has long been recognized that the average mill cutting 200,000 feet and more per shift can not economically handle small logs. By small logs is meant those averaging around 12 inches and less top diameter. The cost of handling such logs through the mill is more than the lumber produced is worth.

The use of Swedish gang mills has often been recommended to meet this problem, but actual installation of such mills has been slow in taking place. At the present time such a mill is under construction at the plant of the Tumwater Lumber Mills Company at Olympia, Washington. This new mill consists of two electrically-driven Swedish gangs of 8 to 12 saws each. The saw blades are 16 gauge and cut a 7/64-inch kerf.

The arrangement of one gang ahead of the other makes the mill exceedingly flexible. In case it is desired to cut squares the log can be slabbed and a few side cuts made by the first gang and the cant sent on to the second gang. The logs are clamped and released automatically by the carriage. Crooked logs can be cut as easily as straight logs. With logs averaging 10 inches in top diameter and 16 feet in length the mill capacity will be about 60,000 board feet in eight hours.

The Tumwater Lumber Mills Company is cooperating with the National Committee on Wood Utilization in the installation of the mills.

ADVERTISING

What kind of life would we lead if all advertising stopped? We would grope around as if in darkness and would be deprived of much that we now enjoy.

Why has advertising grown so tremendously? Only 10 years ago $150,000 was a large advertising appropriation. Five hundred thousand dollar expenditures were uncommon and the $1,000,000-a-year advertisers could be counted on the fingers of one hand. Today many accounts exceed $5,000,000 a year. Several exceed $10,000,000.

Will this growth go on?

When in Detroit the other day I discussed this subject with Henry T. Ewald, president of the Campbell-Ewald Company, one of the biggest agencies in the world, supervising the spending of many millions for General Motors, United States Rubber, Burroughs, and other industrial leaders.

"Because advertising is a big economic factor in modern life," said Ewald, "we can look forward to a constant extension of its use. Advertising is as much a part of modern business as power. Just as executives have discovered that manufacturing costs are reduced by the use of power, they find that selling costs are reduced by the use of advertising.

"In the final analysis business men are investing millions in advertising because it is an economical investment.

"For example, several hundred thousand dollars were recently spent in advertising to introduce the new General Motors car, the Marquette Six. The day before the campaign started, the word Marquette meant a river or a city or an explorer or nothing in particular to the average American. When the campaign was completed, Marquette meant a motor car, built by Buick, to literally millions of potential buyers."

The same result could not have been obtained in an equal length of time by any method except advertising - regardless of how much money was spent. And the new product could not have been successfully launched without that knowledge on the part of the general public.

"The average man is interested in people. He gets no thrill out of inanimate things. Yet last December millions of people went in a single day to see an inanimate object - the new Chevrolet Six. Advertising did it. Without advertising, not 50,000 people would have gone; and it would have been months before the country at large knew anything about it.

"If you don't think that advertising is a fundamental of modern life, imagine what would happen if all advertising were to be eliminated over night. You would put on a collar which didn't carry its maker's name and it probably would scratch your neck. You would shave with soap from an unmarked tube and your face doubtless would be irritated. You would drink unpedigreed coffee and it wouldn't be good to the last drop.

"Your newspaper would be a badly printed sheet containing only the barest news - because advertising revenue is responsible for the completeness of the modern newspaper. You would go to work in a nameless automobile - and you wouldn't drive with confidence. If you wanted to buy a pocket knife you would have no way of locating a hardware store except by seeing hardware displayed in a window.

"Throughout the day and every succeeding day every purchase you made would be a blind purchase. And with almost no exceptions, everything you bought would be of poor quality, for manufacturers would have no incentive to make a high quality article because you would have no way of knowing the maker, and hence no way of going back and becoming a repeat buyer.

"There would not be a single object to which you could point and say 'I want that because I know the company which makes it and I believe that it will give me my money's worth.' There would be no such thing as the business faith which is stronger than a written guarantee. There would be no public goodwill which causes a man to lay down his money, confident that he will get full value in return.

"We would all be going around in a buyer's haze. We would have nothing to which we could pin our faith. We would have no confidence in anything except that which we made ourselves or which was made and sold by our intimate friends.

"Naturally business would stagnate."

Of the future, Ewald declared: "In the next decade America's production is going to reach undreamed-of heights. And we are going to see the use of advertising in direct proportion. Because advertising is the most economical way of getting that increased production consumed."

Advertising has entered into our daily life more than we have ever stopped to analyze, has it not? - B. C. Forbes, in Washington Herald.

THE UINTAH BASIN INDUSTRIAL CONVENTION

Out in eastern Utah there is an expansive basin that is excluded somewhat from the outside world by miles of unsettled mountainous country through which no railroads penetrate. Scattered about the basin are small towns and isolated ranches where live some twenty-two thousand people working hard to develop the wealth of natural resources about them.

On August 7, 8 and 9, these people assembled at Fort Duchesne to hold their seventh annual industrial convention. Families came from far and near to pitch their tents on or close to the extensive lawn-covered square at the Fort and to join in the festivities. It is estimated that nearly 14,000 people attended the convention. Competent play ground directors took care of the children, leaving the older folks free to attend the numerous lectures, class sessions, and recreational attractions arranged for their benefit. The list of lecturers this year included:

The Hon. R. W. Dunlap, Assistant Secretary of Agriculture, Assistant District Forester Ernest Winkler and Associate Range Examiner A. R. Standing of the Forest Service, Congressman Colton, Governor Dern. District Forester R. H. Rutledge, E. G. Peterson, President of the Utah State Agricultural College, and President Thomas of the University of Utah.

The department sessions were conducted by specialists in the subjects covered, who were sent to the convention by the Schools of the State and by various Government bureaus. For the women there were discussions in cooking, dressmaking, home sanitation, and so forth. The men were instructed in such subjects as dairying, field crop culture, and range management. Ernest Winkler, Assistant District Forester in charge of Range Management, took charge of the Forest and Range department sessions. The young folks were given intensive training in recreational leadership. As a result of the lectures from the speaker's platform and of department discussions, together with previous thought and discussion, the stockmen assembled unanimously passed a resolution commending the Secretary of Agriculture, the Secretary of the Interior, and the Utah delegation in Congress for their efforts in behalf of the passage of the McNary-McSweeney Bill which makes possible the appropriation of funds to carry out an enlarged research program, and recommending that they put forth efforts to secure additional appropriations of funds sufficient to carry out needed range research work. Another resolution urged the two Secretaries and the Utah delegation in Congress to secure Federal supervised control of the public domain in Utah at the earliest possible date. - District 4

AN EARLY INSECT EPIDEMIC

By Elers Koch, D. 1

The Bulletin has recently published a number of interesting historical references dug up by Mr. Munns on forest fires in the early days of this country. I just ran across an equally interesting reference to an early insect epidemic of apparently vast proportions. The reference is from Paul Kanes' "Wanderings of an Artist Among the Indians of North America," London, 1859. In the course of a canoe voyage across Canada, his journal for June 6, 1846 records:

"It was a remarkable fact that the trees on each side of the river and part of the Lake of the Woods for 450 miles of our route were literally stripped of foliage by myriads of green caterpillars which had left nothing but the bare branches, and I was informed that the scourge extended to more than twice the distance I had named, the whole country wearing the aspect of winter at the commencement of summer. As it was impossible to take our breakfast on land unless we made up our minds to eat them, dropping incessantly as they did among our food, and the ground everywhere covered with them, we were compelled to take it in our canoes."

The reference to "Lake of the Woods" places the infestation closely. It would be interesting if some of the foresters in Minnesota would check the ring growth of trees in that vicinity back to 1846 and see whether this remarkable defoliation is recorded in retarded growth.

TEACHING FORESTRY THROUGH EXHIBITS

It has been said that nine-tenths of our information and education is obtained by ocular impressions. Since our eyes play such a large part in the process of our education, it should and does follow that it is essential that we stress the use of exhibits in portraying our ideas and disseminating information regarding forestry.

The usual definition given for an exhibit is a display of goods and ideas. It really means more than that, as it means presenting the exhibit to an audience in such as way that it will make an impression, tell a story, and be remembered. It embodies proper arrangement and attractiveness, as well as the modification of ideas so that an average audience can readily comprehend the meaning.

The type of audience plays a great part in the development of an exhibit. An exhibit on the process of the manufacture of artificial silk for a grade school would be highly impractical if only charts were used to explain the intricate chemical and physical process from wood to the finished product. A better method is to show the products step by step in their actual form.

There is a wide field for originality in exhibit work in organized forestry. Following the same beaten paths in exhibits not only causes loss in popular interest, but usually causes the organization back of the display to be judged by the display. No small amount of responsibility is placed upon the exhibit, as there are many details to be considered, each of which should be given careful thought and study. The exhibitor should learn to determine the manner in which he desires to portray the subject and employ the best method of presenting it to the audience. - Excerpts from an article by Ralph C. Wible, in Pa. Dept. of Forests and Waters Service Letter.

"I SHOT AN ARROW INTO THE AIR"

By Willis W. Ward, Colville

A short time ago I was visiting a friend in Colville, Washington, and he told me he had a specimen he wished me to see.

He brought me a piece of pine board one inch thick and about 10 inches long in which was an iron arrowhead about an inch long, three-eighths of an inch wide, and slightly over one-sixteenth of an inch thick. There was a piece of the arrow on which the head was mounted but only the part reaching through one board remained as the rest had been lost in the boards previously sawed. The fiber with which the head had been secured was still on the arrow.

A fire had burned the arrow before the tree had grown around it and apparently the charred wood of the arrow had discolored the wood of the tree until it was about the color of rich pine pitch. The grain of the tree looked as though it had grown around a knot.

Naturally we wondered how long it had been in the tree. To figure roughly, we took the board and assuming the tree to be round we took the contour of the extreme growth ring next to the sap side and figured the tree had been about 32 inches in diameter. Allowing 5/8 of an inch as the penetration of the arrow we found it to be between 85 and 90 years.

No doubt it had been there longer than the time we figured as the exact edge of the log was not determined. We assumed the sap edge of the board on hand to be the edge of the log.

I expect the readers of this article not to question the manner in which we arrived at this conclusion. The board and arrow may be had for those who are more qualified to solve the problem.

YE EDITOR DISCOVERS

By an act recently passed and entitled "The Pulpwood Conservation Act," the Minister of Lands and Forests of Ontario is given power to make forestry practice compulsory on private lands in that Province. The spirit of the act, however, is one of cooperation, its purpose being to place the pulp and paper interests of the Province on a permanent basis with respect to raw material, so that the industry may have an assured and continuous supply of wood.

The new act becomes effective immediately. Under its terms the pulpwood companies are required to file with the Department of Lands and Forests on or before September 1, 1929, a detailed and comprehensive statement of all their operations, including financial transactions, plants, inventories of pulpwood cut within the past five years, the condition and amount of growing pulpwood, outside purchases, exports, and so forth. The act further provides that each company must submit a working plan providing for placing its wood supply on a sustained yield basis. When the plans are received by the Department of lands and Forests they will be the subject of conferences between officials, foresters, and the forestry board of the Province to determine how the companies' forests should best be managed in order to place them on a sustained yield basis. The Minister of Lands and Forests is given necessary authority to put these working plans into effect when they are finally approved. He is given the further authority to fix from time to time the size and kind of trees to be cut and to establish nursery stations to supply the companies with nursery stock for forest planting. The Lieutenant-Governor-in-Council may require the companies to plant a certain quantity of stock each year.

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The Michigan Conservation Commission has authorized a forest fire experiment, the purpose of which will be to determine by practical methods the most efficient means of forest fire control. Lands will be set aside for the experiment by the Commission.

It has been roughly estimated that the cash outlay aside from equipment will probably not exceed $5,000 a year for perhaps a five year period. During the past six years there has been a loss of $1,321,058 from forest fires in the State, and as a matter of insurance to the increasing number of State parks, forests, and other similar projects, the Commission realizes the importance of placing fire control and prevention on the highest possible basis of efficiency.

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Colonel James C. Roop, Chicago banker, has been appointed Director of the Bureau of the Budget, succeeding Brigadier-General Herbert M. Lord, who retired from the office May 31, to enter private business. Colonel Roop is not entirely a stranger to the budget work, inasmuch as he was assistant to General Charles G. Dawes, when the latter was budget director. Roop is the third man to hold the position of Director of the Budget, General Dawes, now Ambassador to Great Britain, and General Lord being his only predecessors.

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Paul D. Kelleter, for many years a member of the Forest Service and recently Director of Extension at the New York State College of Forestry at Syracuse has been appointed Administrative Assistant to the Federal Farm Board, and is now engaged in assisting the Board in the task of perfecting its organization.

ARE "CATS" THE BEST TRACTORS?

In India one type of tractor - produced in the workshops of the Forest Department - is used a great deal in the logging and lumbering industry, and it is a very useful and economical machine. This tractor can be had in various models weighing from one to three tons, and costing from $500 to $1500 f.o.b. fully equipped; it has four separate and distinct tracks, each fitted with a special under-surface, giving a high frictional resistance on the muddiest of soils and enabling a draw-bar pull of 2,000 to 4,000 pounds to be secured; no gear box is fitted on these tractors, the power being extremely flexible, so that almost any speed from one-half to 5 m.p.h. can be obtained. The track mechanism is such that the body of the tractor remains level at all times, whether working uphill or downhill. The whole power plant is enclosed in an exceptionally well-made waterproof and dustproof housing, enabling the tractor to work easily and without any harm in dusty locations, or even in deep water. The tractor is independent of outside sources of fuel supply; its fuel consumption amounts to about 500 pounds a day - all of which can be obtained locally - a great advantage when logging in isolated areas. The driving seat is on the front of the tractor, the control being somewhat similar to that of airplanes, namely, pedals for steering and a short rod, rather heavy, - for governing speed and drawbar pull. Whilst a driver, who, incidentally, is paid only $10 a month, is generally used with these tractors, on certain classes of work the controls can be set so that they will work almost automatically and, one might almost say, like human beings. For instance, in piling logs around a sawmill, a half-piled log is allowed to fall down again when the midday whistle blows. Yes, very human - is the elephant. - G. W. Houlding, Indian Forest Service in Forest Club Quarterly.

TREE DISTRIBUTION FOR UTAH

The State of Utah, through the Extension Service of the State Agricultural College at Logan, has recently entered into a cooperative agreement with the Federal Government under the provisions of Section 4 of the Clarke-McNary Act.

Work is already under way for the establishment of a nursery in the vicinity of the State Agricultural College, for the purpose of producing woodlot, windbreak, and shelterbelt planting stock for cooperative distribution to farmers. While the new nursery is being developed, and before the first stock is large enough for distribution, it is expected that considerable planting stock will be distributed by the Extension Service through the courtesy of the School of Forestry of the University of Idaho.

A large field for tree planting exists in the State of Utah. Early settlers established windbreaks in nearly all the communities in which they lived. However, these plantations have now reached maturity. Windbreaks and small woodlots which were planted fifty or sixty years ago are now decadent and should be replaced. With the knowledge now at hand, it will be possible to replace many plantations with longer lived and more valuable species than those originally planted.

The Utah nursery will be developed and cared for by the Extension Service. Student labor will be employed as much as possible and the nursery will be used as a field laboratory for students in the Department of Forestry at the State Agricultural College.

"CANCER EYE" FROM YUCCA

Cattle in the Jornada region are relatively free from diseases. However, there is one disease which is at times quite prevalent - an affliction of the eye commonly called "Cancer Eye." Mr. Hal Cox, Manager of the San Augustin (Cox Brothers) Ranch has been observing this disease for several years and has come to the conclusion that there is a direct relation between the amount of soap weed (Yucca elata) occurring in the pasture and the number of cows with cancer eye. He believes that the cancer is the result of a slight wound in or near the eye from contact with the sharp pointed soap weed leaves. This wound becomes infected at the time it is made or later on by coming in contact with a leaf which has been loaded with infection by a cow with a well developed cancer. This theory seems to be well founded since Mr. Cox made his observations in two of his yearlong pastures in which the same cows graze year after year. Pasture No. 1 has little soap weed and the cows very seldom have cancer eye. Pasture No. 2 has plenty of soap weed and in this pasture most of the cows afflicted with cancer are always found.

DOES IT PAY?

By J. C. Scharff, Malheur

The question often arises among cattle men of today whether it pays to breed in pastures or on good protected ranges. Last year J. L. Deardorff & Son, of the Malheur Forest region, bred 182 aged cows and 48 yearling heifers in separate pastures. In the fall 24 fat cows were sold and the remaining 206 head wintered over. The first calves began coming the latter part of February and by April 16, 81 per cent had calved. There are yet quite a number that will calf later. Better than a 95 per cent calf crop was in evidence and from the 48 yearling heifers only one failed to calf. Two young bulls were used with the 48 yearling heifers and four older ones with the 182 head of older cows. A bad streak of luck was experienced with the calves a short time after the cows began calving and some 30 odd were lost but it was no fault of pasture breeding. Deardorffs are sold to the idea of pasture breeding and will keep all of their stuff of breeding age in pastures this coming season.

NEW WOOL SELLING SERVICE FOR ARIZONA FARMERS

A new wool-selling service is offered to farmers of the Salt River Valley, Arizona, who own only a few sheep. The Maricopa County Farm Bureau has become a member of the Arizona Wool Growers' Association of Phoenix, and will assemble the small lots of wool and market it on a brokerage charge of one-eighth of a cent per pound. Ranchers wishing to sell wool under this plan will list it at farm bureau headquarters, giving the approximate quantity. When a sufficient quantity is listed to attract a buyer, a day and place for delivery will be appointed and a buyer will be present as well as a representative of the county farm bureau and wool growers' association. Each farmer's wool will be graded and weighed separately and he will receive a check from the farm bureau less only the brokerage charge. The quantity of wool produced in the valley is estimated at approximately two carloads of 30,000 pounds each. - District 3

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture
February 1, 1905

FOREST SERVICE
U.S.
DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL.XIII No. 34 WASHINGTON, D. C. AUGUST 26, 1929

A PRIVATELY ENDOWED FOREST FOR KENTUCKY

By E. Murray Bruner, District Inspector Central States

Through the generosity of Mr. Isaac W. Bernheim, the people of Kentucky have just been made the recipients of a privately endowed forest which is to be known as the Isaac W. Bernheim Estate. Although Mr. Bernheim now resides in Denver, Colorado, he was for many years a resident of Louisville, Kentucky, where he has long been well known as a successful capitalist and by reason of his various public benefactions.

Born in Germany in the region of the world renowned Black Forest, Mr. Bernheim came to the United States and settled in Kentucky as a very young man, but not so young that his mind had not already become imbued with the ideas of scientific forestry as he saw it in actual practice in his native Black Forest. Those who have his interests in charge state that he has long cherished the desire to donate to the people of Kentucky a forest property with adequate financial provision to assure its administration in accordance with the best known principles of forestry.

The property, which embraces some 13,100 acres of rolling forest land, is located in Bullitt and Nelson Counties, within a section known as the Salt River Hills. Topographically this section is characterized by the presence of long, low ridges separated by narrow valleys. The forest is mostly cut-over land and consists of mixed hardwoods with a small amount of pine on the drier ridges. It lies about 25 miles south of Louisville on the Springfield branch of the Louisville and Nashville Railroad. It is accessible to Louisville and other nearby cities and towns by hard surfaced roads.

The property is to be kept permanently under intensive forest management with the avowed purpose of making it serve as a continuous demonstration of the best forestry practice. A technical forester has already been placed in immediate charge. The development of the protection plan is well under way. Seven year-long fire guards have been employed and a 47-foot steel lookout tower and a telephone system connecting the tower and the various guard quarters with forest headquarters have been constructed. A start has also been made toward the construction of a system of fire breaks.

Tied in with the protection plan, a program of improvements consisting primarily of road and trail building to make all portions of the property accessible to the public and to facilitate intensive utilization of all classes of products is being formulated. While the complete plan of silvicultural treatment has not yet been announced it appears to provide for periodic thinnings, improvement cuttings, and planting of young trees. Planting will be resorted to not only for the purpose of restoring a forest cover to numerous old fields and cleared areas but also when deemed desirable to fill in gaps resulting from the removal of defective trees and undesirable species.

In accordance with the expressed wishes of the donor, this property is to be administered not only as an outstanding example of good forestry practice from the standpoint of timber production and utilization, but at the same time the recreational resources are to be developed to the fullest, and it is to be made a bird and animal sanctuary. The entire area will be fenced and it is planned to stock at least portions of it with deer and other game animals.

The plan of control is unique. There has been formed and incorporated a foundation -- the Isaac W. Bernheim Foundation -- for permanent maintenance of the project. Control of the foundation has been entrusted to a board of trustees from the membership of which an executive committee of five persons has been appointed for the active administration of the property.

EXPERIMENTAL FOREST

By Quincy Randles, D. 3

Two thousand four hundred twenty acres on the Coconino National Forest in Arizona were set aside in the timber management plan for the use of the Southwestern Forest Experiment Station as an experimental forest. Parts of the area have been cut over under Forest Service sales or culled prior to the creation of the Forest and the remainder carries a virgin stand of timber estimated at 13,500 M feet, over 85 per cent of which is western yellow pine and the rest Douglas fir and limber pine. The area is within a few miles of the Experiment Station on a good road, which will make the timber readily accessible to the mills at Flagstaff.

An agreement between the Director of the Experiment Station and the Supervisor of the Coconino has been prepared and approved. This agreement defines the status of the experimental forest and outlines the policy of administration. Existing permits are to be transferred to the jurisdiction of the Experiment Station. The area within the forest is covered by the Coconino lookout system and the regular Coconino fire protection force will handle the fires, with the cooperation of the Experiment Station.

The primary purpose of timber cutting on this forest will be to carry out silvicultural experiments. The Experiment Station will have complete control of all timber sales on the forest. The Director of the Station has been granted authority to make sales from the forest up to 1,000 M feet.

FOREST MOVIES PAY PROMPT DIVIDENDS

Note from Ranger Bob Thompson as reported in the Coronado Bulletin: "This was a Class A fire, lightning struck tree, put out by party on attached time slip. Up on the high ridges near the Mexican line west of Lochiel. This is the result of the picture shows down in that neck of the woods." - D. 3 Bulletin

Nobody reads editorials nowadays, some say. But just bawl somebody out in one and see what happens. - Florence (Ala.) Herald.

"SHOW-ME" TRIP ON MONONGAHELA

As guests of the Forest Service, some 60 prominent West Virginians were recently given a "show-me" trip over the Monongahela National Forest in West Virginia. This was the first all-West Virginia forestry trip ever made in the State, and the interest aroused and the enthusiasm shown over the possibilities of the Monongahela and of West Virginia forestry in general were extremely encouraging.

Leaving Parsons on the morning of August 6, the party visited the Parsons Nursery, the Canaan Mountain Plantation, the Canaan Lookout Station, Black Water Falls, and the "Sinks." The first night was spent in a Forest Service road camp and following a bountiful supper a campfire meeting was held. At this time enthusiastic and constructive support of the Federal and State forestry programs in West Virginia was pledged by many prominent lumbermen, coal men, legislators, and others present. On August 7 the party visited the Dilley Hollow Plantation and the famous Rothkugel Plantation made by an Austrian forester in 1907. The trip ended at Franklin that night.

Under the auspices of the Seneca Rocks Association a big outdoor meeting was held on the following day at Seneca Rocks, with more than 1,000 people from all the "hollers" in the neighborhood in attendance. The need of good roads on the National Forest and of vastly improved State roads approaching the Forest was emphasized at this meeting and plans for the development of the recreational possibilities of the region were discussed. Bouncing over immense bowlders and ruts, those who had attended the "show-me" trip had already received an excellent demonstration of this need for roads.

The "show-me" trip was conducted by Supervisor C. L. Perkins of the Monongahela, with the able assistance of Nat D. Frame, State Director of Extension, and T. W. Skuce, Extension Forester for West Virginia. Among those attending were Senator Goff and Congressman Bowman of West Virginia, John Raine, prominent West Virginia lumberman, and a number of State Senators and delegates, lumber and coal operators, State road commissioners, and others. - C. E. R.

ON READING SIGNS

By H. R. Elliott, Malheur

Old Bill George, veteran of many battles between cattlemen and sheepmen, in the Malheur country, was visited at his camp on Pleasant Hill a few days ago. Many years ago, this same Pleasant Hill was made a very unpleasant place for Bill by an irate homesteader who sent several shots at him as an invitation to move his sheep from those parts. Bill took cover behind a rock until he thought that the battle was over, then peered cautiously over the rock. Alas! The battle was not over, and Bill views the world's beauties through one eye since then.

One time a note was left in Bill's camp, tacked to a tree. Red-penciled letters printed on a sheet of paper briefly told Bill to leave at once. Bill's education didn't include reading, so he pondered on the note for several days, then suddenly the camp was filled with armed cowboys and while one read and explained the note to Bill, the rest proceeded to kill some 300 ewes and burn his camp.

The mystery of the note was explained and never forgotten. Some ten years later an innocent Forest Ranger happened by Bill's camp and tacked up one of the old-fashioned fire signs, then rode merrily on his way. Bill came in at dusk to cook his supper and in the midst of his labors this red-lettered fire sign came within range of his vision. He could not read what it said, but he knew what it meant and without further study he proceeded to move himself and his sheep as far as possible from that spot before dark!

FORESTRY AND DEER

An editorial in The Indiana Farmer's Guide for June 15 says: "Whenever anybody invents something new, there is somebody to abuse it. Man devised weapons for defense and somebody used them for murder. The State foresters have aroused Indiana on the subject of tree planting and now comes a clique of men who would plant deer in the woods. Everybody knows that deer eat trees and the State forestry experts want no deer; they are having trouble enough now with the rabbits. There's always somebody to take the joy out of life! Deer will be dear wherever they are kept. Like cows and horses, they must eat; unlike them, they like leaves better than grass. It is a question of how dear a price in leaves we can pay for the deer without serious loss of forest. But there ought to be a common-sense ground between good forestry and wild life conservation. There should be some basis of agreement between the foresters and the sportsmen, and if Indiana is to have forests of considerable size, a few deer would not do any appreciable harm. Deer and forests get along very well together before the white man came. If it comes to a point where the deer eat all the young trees, a few thousand hunters can solve the problem."

FLORIDA GETS INCREASE IN FORESTRY APPROPRIATION

An annual appropriation of $61,000 was granted to the Florida Board of Forestry, an increase of $48,500 over the appropriation for the preceding year. This appropriation supplemented by funds from the Federal Forest Service and private property owners will allow the Florida Board of Forestry a budget of over $150,000. Of this amount, $129,000 will be expended for educational and forest fire control work. With this cooperative fund it will be possible to expand the protected area by more than 1,000,000 acres. It will provide at least ten protective units, in addition to the seven already in existence.

Sixteen thousand dollars will be devoted to educational work. This will include cooperation with the American Forestry Association and their Southern Educational Project in the showing of motion pictures in every rural community in Florida. In addition, it will provide for fair exhibits, leaflets and pamphlets, posters, lectures, and educational work in the schools. This work will be under the direction of Assistant State Forester H. A. Smith.

Five thousand dollars will be devoted to cooperation with property owners in the raising and distribution of forest tree seedlings, forest tree plantations, demonstration plots, improvement cuttings, and Applied Forestry in general. This work will be under the direction of Forest Assistant C. H. Coulter.

THE APACHE CYCLONE

The cyclone of May 25 on the New Mexico Division of the Apache did more damage than was at first thought, according to a letter received from Supervisor Kartchner. An examination of a half section in the path of the storm showed approximately one million feet of timber destroyed. If this same rate of damage holds out throughout the path of the storm, which was about 25 miles long, the damage will probably reach 15 or 20 million board feet. A mile of new drift fence built last fall was practically destroyed. A thorough examination of the area is planned and an attempt will be made to salvage at least part of the timber by means of small mills. - District 3.

ON THE STANDARDIZATION OF PLANT NAMES

By I. T. Haig, Northern Rocky Mt. For. Exp. Sta.

The writer is whole-heartedly in agreement with C. S. Robinson of the Lassen, who in a recent article in the Bulletin advocates the standardization of the common names of our range, forage, and browse plants. But he would advocate just as strongly the need of standardizing our botanical nomenclature as well. If Skunk Cabbage in Kern County is False Hellebore in the Siskiyou, so Opulaster malvaceus in the District office becomes Physocarpus pauciflorus in the St. Joe-Palouse. Canada Thistle, known by that common name through the length and breadth of its range in this region, becomes Cirsium arvense, Carduus arvensis, or Onopordon acantium according to the authority consulted. A Ranger who learns on good authority the name Shepherdia canadensis for Bitter Buffalo Berry in the fond hope that he now has a name on which all good men agree, may find himself somewhat puzzled at a visiting inspector's casual reference to the abundance of Lepargyrea.

These inconsistencies on the part of our botanical friends may prove only a slight inconvenience to anyone within reach of an armful of "Flora," but it becomes something more than that to the practical rule-of-thumb botanist whose difficulties in memorizing Latin names are large enough at best. The official designation of some botanical authority whose nomenclature would be accepted as standard by the Forest officers of a specified region would go far toward obtaining desirable uniformity within the Service at least.

WATER GLASS SAVES TREES

The demand for wood has brought out not only the use of preservatives that have given longer life to manufactured wood, but has led to the use of preservatives on valuable growing trees, according to the New York State College of Forestry at Syracuse University.

Sterilizing preparations have been used with more or less success in bandaging the wounds of trees. Ordinary commercial coal tar creosote is one of the best preparations for destroying and preventing the growth of certain tree diseases. It can be applied with an ordinary paint brush and should cover every part of the exposed wood.

A solution of sodium silicate, commonly known as water glass, is one of the most recently used dressings for injured trees. Water glass is largely used for preserving eggs. The commercial solution is a sirupy liquid which becomes quite thick in cold weather It is more convenient and economical to use when diluted slightly, especially in winter. A solution containing three parts of water glass and one part of water has given practically as good results as the full strength solution. It is easily applied with a paint brush and appears to be entirely harmless to the tree.

Owing to its solubility water glass readily unites with the sap of the tree and is thus able to penetrate slightly into the pores of the fresh surface of the wood. Upon exposure to the air, it soon hardens, apparently forming silica, which forms an insoluble cover over the surface to which it is applied, preventing both the escape of sap and the entrance of harmful organisms.

BOY SCOUTS ADOPT RESOLUTION

The National Council of the Boy Scouts of America at its nineteenth annual meeting, held in New York City the latter part of May, adopted the following resolution:

WHEREAS the forests of our country are being destroyed four times as rapidly as they are being replaced, and human carelessness is responsible for 60 per cent of the property loss each year through forest fires, a loss involving millions of dollars,

BE IT RESOLVED that we recommend that the Boy Scouts assist in every way the U. S. Bureau of Forestry in its campaign for conservation, and that the Boy Scout troops engage in tree planting as a good turn to the Nation."

YE EDITOR DISCOVERS

According to the compilation of fire figures just completed, there was a total of 177,362 forest fires in the United States last year. Of these, 40,579 broke out on protected lands, while 136,362 occurred on unprotected areas. On the protected areas fires burned over a total of 4,428,500 acres, causing damage estimated at $8,583,620. The acreage burned over on unprotected land was 39,502,810, the damage being placed at $74,350,600

Of the 568,354,010 acres of forest land in the United States 68.5 per cent last year had some sort of organized protection, either by the Federal Government, the private owners, or by Federal, State, and private agencies cooperating under the Clarke-McNary law. There were however, 178,855,050 acres, or 31.5 per cent of the total area, still in need of protection. The fact that the fire damage on the protected 68½ per cent of the total forest area was less than one-eighth that on the unprotected 31½ per cent is a striking demonstration of the value of organized protection in saving forest values.

Careless smokers were responsible for the largest number of fires on protected forest lands, causing 8,346 fires, or 20.6 per cent of the total. Incendiarism ranked next as a cause of fire, being responsible for 7,276 fires, or 17.9 per cent. Brush-burning was reported as the cause of 13.2 per cent of the fires, lightning 9.3 per cent, camp fires 9.1 per cent, railroads 8.9 per cent, lumbering 3.9 per cent, miscellaneous 9.2 per cent, and unknown 7.9 per cent. Reports as to causes of fires on unprotected areas are too incomplete and unreliable to warrant tabulation.

The Gulf group of States had the greatest number of fires in 1928 as well as in 1927. A total of 99,120 fires on the unprotected area and 12,987 on protected lands were reported in 1928 in this group of States. As against 1.14 per cent for the United States as a whole, the proportion of the total protected forest land burned over in the Gulf States last year was 5.60 per cent. In the Central States, 1.68 per cent of the protected area was burned over; in the Pacific Coast States, 1.64 per cent; in the Middle Atlantic States, 0.99 per cent; in the Southeastern group, 0.98 per cent; in the Lake States, 0.43 per cent; in the Northeastern group, 0.21 per cent; and in the Rocky Mountain group, 0.12 per cent.

Nearly 30,000,000 additional acres of land were placed under systematic fire protection during 1928.

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A power site of more than 20,000 horsepower has been discovered in the Tongass Forest by the aerial survey force now working in that region, according to telegraphic reports. This project is expected to prove extremely valuable in connection with a proposed power development for the manufacture of wood pulp on the Tongass. The site is located on the east side of Taku Inlet near Greely Point.

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C. H. Guise, assistant professor of forest management, Cornell University, has been made assistant director of the forest education inquiry which the Society of American Foresters is conducting under a grant by the Carnegie Corporation and of which Henry S. Graves is director. During the coming school year Professor Guise's work at Cornell will be handled by Francis R. Righter, junior forester at the Southern Forest Experiment Station.

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The Michigan Department of Conservation Weekly News of August 3 contains a brief account of the State's forest fire division. This is a skeleton system which is capable of expanding at a moment's notice to deal with extraordinary conditions brought about by extremely hot weather or a series of fires. The division is in charge of a fire chief and two assistants. Under the divisional head are two locomotive and two fire inspectors, whose work covers the entire State. Then in each of the fifteen districts there is a district warden who as a rule is largely concerned with law enforcement, and an assistant fire warden whose main job is forest fires. Other employees in the districts are special fire wardens, emergency fire wardens, fire boss companies, towermen, and keymen. All told, there are approximately 1000 temporary and permanent employees in the fire division. The majority of these are on duty only when actually called upon to fight fire. The keymen are residents located at strategic points who can on short notice be depended upon to render assistance in times of extreme danger.

MORE INDIAN FIRE

By E. N. Munns, Washington

Captain John Smith is known to most kids for the Pocahontas incident, which some historians are now trying to make out as untrue. However that may be, this famous member of the Smith tribe wrote of his experiences in a more or less entertaining fashion, and in his day and age was as well known as the modern traveler and explorer who rushes to print with the story of his adventure. While old Captain John did not leave a series of books, he did leave a fairly complete record of his experiences in the letters he wrote, in the day-book that he kept for the early Virginia colony, and in the reports he prepared.

Thus he and others of his time have left a story of the Indian method of hunting which was to hem in the game with fire. The Indians would form a big circle, start fires, and by making much noise, would drive the game - chiefly deer - into the center of the circle. Confused by smoke and the yelling, the deer were easily slain. Many were thus taken at one time. Smaller groups of Indians would follow the same general practice. In such drives, the Indians would make a string of fire across a peninsula and herd the deer down into the point. The deer would then be driven into the water where they were easily killed by the savages in canoes.

"DURABLE DOUGLAS FIR"

By A. W. Eastman, Snoqualmie

About 200 yards south of Taylor River Ranger Station, within the Snoqualmie Forest, lies an upturned Douglas fir windfall on top of which are growing six hemlock trees; three of which are 25", one 21", and two 12" D. B. H. At the time the writer examined this tree, Ranger H. E. D. Brown had bucked two 16" blocks out of it about 40 feet from the upturned root, at which point the tree measured 6 ft. in diameter of solid sound wood with the exception of a slight amount of decay along a check in the center of the tree. It appears probable that the three largest trees growing on top of this windfall are around 100 years old and no knowing how long before the start of these trees that the old fir went down. The phenomenal growth that these hemlock trees had to make for their roots to reach the ground on each side of this windfall seemed interesting, since at one point the windfall lies up off the ground to the extent that the main roots which are about 18" in diameter at their base, had to go about 9 feet before they could get their tentacles into the earth.

HOW ABOUT IT?

On page 6 of Miscellaneous Circular 0-151 of June 1, 1926 the following instructions appear:

"In Service correspondence, with 'Dear Sir' or 'Dear Mr. Smith' use 'Very truly yours'; with 'My dear Mr. Smith,' 'Very sincerely yours,' 'Sincerely yours,' or 'Sincerely,' according to the degree of informality deemed appropriate."

Why should the Forest Service set itself into a usage contrary to that commonly accepted as most desirable? Would not every one of us if he received a letter from a friend with the salutation "My dear Blank" feel that the friend was hurt about something, or he otherwise would have addressed us merely as "Dear Blank?" Among many authorities, Edwin C. Wooley in his New Handbook of Composition is quoted as saying that "Dear Mr. Park" is more intimate than "My dear Mr. Park." (page 242.) Should not the instructions of Misc. 0-151 in regard to the closing use of "Sincerely" or "Truly" be reversed? - M. H. Wolff, D. 1

DR. MEINECKE IS MADE PRINCIPAL PATHOLOGIST

Dr. E. P. Meinecke, for 20 years in charge of the San Francisco branch office of forest pathology, has been promoted to the position of principal pathologist of the bureau and placed in charge of research planning work throughout the United States. Dr. Meinecke recently completed an extensive tour of Europe for the Department of Agriculture to investigate plant and tree diseases that would prove destructive to American forest species should they gain entrance into this country. Dr. Meinecke will maintain headquarters in San Francisco. His assistant, Willis W. Wagner will assume charge of the San Francisco office of forest pathology. - D. 3 Bulletin

TWO JOBS AT ONCE

By H. E. D. Brown, Mount Baker

As there is very little pressure in the water system at the Baker River Ranger Station, on the Mount Baker Forest, the pipes have to be cleaned out about once a year. This spring we were testing the fire pump and I took the nozzle up to the spring and stuck it into the end of the pipe and had the pipe cleaned out in about ten minutes. The pump was not working very well and while the P. A. was cleaning the spark plugs, etc., the packer hung some saddle blankets on the fence. When he got the pump going again the packer turned the nozzle on the saddle blankets. He cleaned ten blankets in about half an hour and did a good job at that. This idea of cleaning blankets is Ranger R. J. Cooke's idea and after trying it I will recommend it to anybody.

WHY DIDN'T HIS NEIGHBORS PROTEST?

A story is going the rounds of the D. O. bringing to the surface a scurvy trick played on some person, unknown, who attended the investigative meeting. A pipe was left near the water cooler one day and during the absence of the owner two of the office girls unloaded it, filled the bottom of the bowl with rubber bands, and replaced the tobacco. The climax of the story runs to the effect that the owner smoked her clean and never noticed the rubber bands. - D. 3 Bulletin

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII. No. 36 WASHINGTON, D. C. SEPTEMBER 9, 1929.

THE PRESIDENT'S PUBLIC DOMAIN POLICY

The following letter by the President was read by Assistant Secretary of the Interior Joseph M. Dixon at the conference of Governors of Public-Land States in Salt Lake City August 26 and 27. It is given in full in order that all field officers may have more than fragmentary press accounts of this momentous announcement.

Hon. Joseph M. Dixon
Assistant Secretary of the Interior
Washington, D. C.

My dear Secretary Dixon:

I have for some years given thought to the necessity and desirability for a further step in development of the relations between the Federal and State Governments in respect to the Public Lands and the Reclamation Service. The meeting of the governors of the Public-Land States at Salt Lake City which you are attending offers an opportunity for consideration of some phases of these questions, and I should appreciate it if you would present them to the governors.

It may be stated at once that our Western States have long since passed from their swaddling clothes and are to-day more competent to manage much of these affairs than is the Federal Government. Moreover, we must seek every opportunity to retard the expansion of Federal bureaucracy and to place our communities in control of their own destinies. The problems are in large degree administrative in character both as they affect the Federal Government and the government of the States.

It seems to me that the time has come when we should determine the facts in the present situation, should consider the policies now being pursued and the changes which I might recommend to Congress.

That these matters may be gone into exhaustively and that I may be advised intelligently, I propose to appoint a commission of nine or ten members, at least five of whom should be chosen from leading citizens of the Public-Land States, and I should like to secure the cooperation of the governors by submission from them of names for such a Commission. This Commission would naturally cooperate with the Department of the Interior.

As an indication of the far-reaching character of the subjects which could come before such a Commission, I may recount certain tentative suggestions for its consideration. No doubt other subjects and other proposals would arise.

PUBLIC LANDS

The most vital question in respect to the remaining free Public Lands for both the individual States and the Nation is the preservation of their most important value - that is grazing. The remaining free lands of the public domain, (that is, not including lands reserved for parks, forests, Indians, minerals, power sites and other minor reserves) are valuable in the main only for that purpose.

The first of the tentative suggestions, therefore, is that the surface rights of the remaining unappropriated, unreserved public lands should, subject to certain details for protection of homesteaders and the smaller stockmen, be transferred to the State Governments for public school purposes and thus be placed under State administration.

At the present time these unappropriated lands aggregate in the neighborhood of 190,000,000 acres and in addition some ten million acres have been withdrawn for purposes of stock watering places and stock drives which might be transferred as a part of a program of range preservation. In addition, some 35,000,000 acres have been withdrawn for coal and shale reserves, the surface rights of which with proper reservations might be added to this program of range development in the hands of the States.

Reports which I have received indicate that due to lack of constructive regulation the grazing value of these lands is steadily decreasing due to overgrazing, and their deterioration, aside from their decreased value in the production of herds, is likely to have a marked effect upon the destruction of the soil and ultimately upon the water supply. They bring no revenue to the Federal Government. The Federal Government is incapable of the adequate administration of matters which require so large a matter of local understanding. Practically none of these lands can be commercially afforested but in any event the forest reserves could be rounded out from them where this is desirable. Therefore, for the best interest of the people as a whole, and people of the Western States and the small farmers and stock men by whom they are primarily used they should be managed and the policies for their use determined by the State Governments.

The capacity which the individual States have shown in handling school lands already ceded out of every township which are of the same character, is in itself proof of this and most of the individual States already maintain administrative organization for this purpose so that but little added burden would thus be imposed. They could to the advantage of the animal industry be made to ultimately yield some proper return to the States for school purposes and the fundamental values could be safeguarded in a fashion not possible by the Federal Government. They would also increase the tax base of the State Governments.

A question might arise upon the allotment of the Federal Road Fund as a result of a shift of the public land ownership. It would only be just if this allotment could be undisturbed for at least ten years while the States were organizing their range conservation measures.

It is not proposed to transfer forest, park, Indian and other existing reservations which have a distinctly National as well as local importance. Inasmuch as the royalties from mineral rights revert to the Western States either direct or through the Reclamation Fund, their reservation to the Federal control is not of the nature of a deprival.

RECLAMATION SERVICE

It seems to me that the vital questions here are to reorient the direction of the Reclamation Service primarily to the storage of water and to simplify its administration.

The Reclamation Fund and the Reclamation Service were created in 1902 and the situation has since changed materially. The present plan as you are aware is that receipts from sale of public lands, mineral royalties and repayments by the beneficiaries for expenditure upon projects all accrue to this fund. The Reclamation Service undertakes special projects upon the authorization of Congress, which are financed from the fund on the basis of return by the land owners or purchasers of the cost of the project but without interest for a term of years. A total of approximately $182,000,000 has been expended from the fund.

The present Reclamation Act is based fundamentally on the reclamation of Government-owned lands. Possible areas available for reclamation have now passed almost wholly into private ownership and the use of the Reclamation Fund for further projects may be legally criticized owing to the fact that the land is no longer part of the public domain and circumlocution by voluntary agreements may not always be possible.

Moreover the application of the fund under the present organization results in very large Federal administrative activities within the States of a character which was never originally contemplated and which could be much better administered by the local State governments themselves. In many ways it duplicates the State water administrations.

There are several tentative suggestions for more effective handling of the fund. For instance, the Reclamation Service for all new projects might well be confined to the construction of permanent works, that is dams and such construction as results in water storage - and at the completion of such construction the entire works be handed over to the States with no obligation for repayment to the Reclamation Fund except such revenues as might arise from electrical power and possibly in some cases from the sale of water until the outlay has been repaid or in any event for not longer than, say fifty years.

Again, there are certain instances of insufficiently capitalized community owned irrigation projects which are at the point of failure, for whom the Reclamation Fund might be made a proper vehicle to rescue homes that are now in jeopardy.

A further activity which might be considered for incorporation in the Reclamation Service would be the authorization to join with the States and local communities or private individuals for the creation of water storage for irrigation purposes. The primary purpose of these suggestions is thus to devote the Federal Government activities to the creation of water storage and a reduction of other activities within the States.

Under such arrangements the States would have the entire management of all new reclamation projects and would themselves deal with the irrigation land questions and land settlements. It is only through the powers of the States that reclamation districts can legally be organized which would incorporate the liability of privately owned lands for irrigation expenditure and by such organization it ought to be possible to finance the subsidiary works.

By direction of the Reclamation Service in some such manner the large provision of water storage would ultimately secure a very large increase in the irrigable area of the various States. It is evident to every engineer that water storage is not always directly connected with an irrigation project but vital to expansion of irrigation. This emphasis and this direction of Federal activities to water storage rather than land development has also an incidental importance to flood control and navigation.

It is not suggested that the States should take over the administration of the established projects but that the system should be set up for future undertakings. If it were instituted it would, of course, be necessary to set up some safeguards to cover interstate projects. No doubt each new project as at present should be specifically authorized by Congress.

It must be understood that these suggestions are only tentative; that they have no application to dealing with power questions except that which is incidental to storage of water for irrigation or its further incidental use in navigation and flood control. Moreover the question of the advisability or inadvisability of opening new areas of land for cultivation in the face of present obvious surplus of farm products does not arise because the activities outlined herein will only affect farm production ten or twenty years hence by which time we shall probably need more agricultural land.

MINERAL RESOURCES

The policies to be pursued in development and conservation of mineral resources of the public domain present many problems. They are problems of a National as well as a local character. I know that the western as well as the eastern States agree that abuse of permits for mineral development or unnecessary production and waste in our National resources of minerals is a matter of deepest concern and must be vigorously prevented.

Because of such abuse and waste I recently instituted measures to suspend further issue of oil prospecting permits on public lands and to clean up the misuse of outstanding permits, and thereby to clear the way for constructive conservation. It may interest the governors to know that when this decision was taken on the 12th of March there were prospecting permits in force covering over 40,000,000 acres of the public domain. We have now determined that over 40% of these holders had not complied with the requirements of the law, that the large portion of these licenses were being used for the purpose of preventing others from engaging in honest development and some even as a basis of "blue sky" promotions. After yielding to the claimants, the widest latitude to show any genuine effort at development under the outstanding prospecting permits, the total will probably be reduced to about 10,000,000 acres, upon which genuine development is now in progress. The public domain is, therefore, being rapidly cleared of this abuse The position is already restored to a point where measures can be discussed which will further effectually conserve the national resources, and at the same time take account of any necessity for local supplies.

GENERAL

These suggestions are, of course, tentative pending investigation of the full facts, but generally I may state that it is my desire to work out more constructive policies for conservation in our grazing lands, our water storage and our mineral resources, at the same time check the growth of Federal Bureaucracy, reduce Federal interference in affairs of essentially local interest and thereby increase the opportunity of the States to govern themselves, and in all obtain better Government.

Yours faithfully,

HERBERT HOOVER.

DOUGLAS INGRAM LOSES LIFE IN FIRE FIGHTING

Douglas C. Ingram, Assistant in the Branch of Range Management in the District office at Portland, met a tragic death in fighting the Camas Creek fire in the Chelan National Forest on August 13. Only meager details are known in Washington. Ingram and a young fire fighter by the name of Saint Louise were missed on that date, and from then until August 24 an intensive search was conducted by a large number of men with the growing fear that Ingram and Saint Louise would not be found alive. Ingram's body was recovered on August 24, but to date no word has been received concerning Saint Louise.

The following is quoted from a letter sent by Associate Forester Sherman to Mrs. Ingram:

"Mr. Ingram's service of twenty years in Forest Ranger work and in his special field of range management had given him a wealth of experience that coupled with his splendid personal qualities made a place for him that any man might envy not only in the work of our organization but in the affectionate regard of all who came in contact with him. In this time of great bereavement you may find comfort in the thought that he died like a good soldier in the performance of most hazardous duty.

"I ask you to accept this expression of the very deep sorrow we all feel at his untimely death and of our profound sympathy with you in your bereavement."

It is believed that Ingram is the first Forest officer under permanent appointment to have lost his life in fire fighting - an extraordinary record considering the great risks that have to be taken.

Ingram entered the Forest Service as a Forest Guard on April 1, 1909. On July 1 of that year he was appointed as Forest Ranger on the Deschutes and two years later was transferred to the Ochoco as Forest Ranger. On July 1, 1917, he was promoted to the position of Grazing Examiner, and on August 9, 1919, was transferred to the Portland office where he was assigned as Assistant in the Branch of Range Management at the time of his death. Although not a forest school graduate, Ingram had had a short course in forestry at the University of Washington.

SOME FENCES IN EARLY AMERICA

By E. N. Munns, Washington

The principal fence in use by the colonial Virginians in the 17th century was the worm fence. There are references to rails as early as 1621; in that year, Mr. Whitaker, a leading planter, is stated to have "railed in" one hundred acres as a protection to the crops he had under cultivation. An order of the General Court in 1626 required all who lived in those parts of the Colony where the cattle ranges were situated, to "rail, pole, or fence" their tilled lands, a clear recognition of a distinction in the methods of enclosure. At a much later date, the charge was brought against Robert Beverly, that instead of using a troop of soldiers under his command as a guard for the Governor, he had set them to felling trees, and making and "toteing" rails. Among the terms which Mr. Reeves of Henrico inserted in the contract by which he leased a part of his estate to Wm. Arrington in 1695 was one requiring the latter to maul 600 fencing rails. The abstraction of such material was a frequent cause of criminal prosecution and civil suit. References to fence rails in all the county records of the 17th century are numerous.

The worm fence, in which the rails were used then as now, was the invention of the settlers of a new country where wood was extremely abundant, and sawmills were few in number.

The scarcity and, as a consequence, the costliness of nails in the early years of colonization, were doubtless an element of importance in the popularity of the worm fence. Whenever it was decided to build an enclosure, there, in close proximity to the line selected, was a very heavy growth of timber only requiring the application of axe and maul to convert it into rails for the immediate construction of a fence. No posts were to be fashioned, no holes to be dug, no nails to be driven. The worm fence is still in Virginia one of the familiar features of the landscape, a monument, like the fence law itself, of the perpetuation of agricultural conditions beginning with the very foundation of the Colony. In spite of its angular character, it is not devoid of picturesqueness in the plantation landscapes. In the colonial age, as at present, it became, after standing a few years, a trellis for the vines of woods and fields, the grape, morning-glory, honeysuckle, and the Virginia creeper, which with their beautiful leaves and blossoms decorated its ugliness.

Not all the fences of this early period were worm fences. Fitzhugh mentions in one of his letters (April 22, 1686) that his orchard was protected by an enclosure of locust wood. This was doubtless a straight fence constructed of panels, the ends of which were inserted in posts standing at regular intervals. Fitzhugh declared that a locust fence would last as long as a brick wall.

The records of Accomac County in 1685 also contain a notation as to an agreement concerning the erection of a fence to protect a cornfield: "Richard Johnson, mulatto, doth by these presents forthwith impower you in my name to confer a judgement unto John Cole to fall, mall, and set up for John Cole upon his plantation where he shall appoint 400 panels of sufficient posts and rails, every pannell ten foot distance and five rails of pine to every pannell, and every post to be seven foot and a half, one foot and a half in ye ground, the said post to be all of chestnut and white oak."

SALADS AND BERRIES FOR FISH

By S. B. Locke, D. 4.

The reference by "Daytonius" to the eating of the seed of yellow pond lily by Montana grayling serves principally to show not only the lack of information in this matter of food value of aquatic plants but of food production represented in water areas in general.

It is unusual to find any considerable quantity of vegetable matter in the stomachs of any of the trout family. However, rainbow trout stomachs often contain sufficient pondweeds (*Potamogeton* sp.) to preclude their being taken in by accident. Also nostoc colonies or "mares eggs" are found in considerable numbers. As to the seeds of the yellow pond lily, this is new information to me. It would be unusual to find many trout or grayling in waters where the lilies are abundant, and further it would seem doubtful if hard-shelled seeds could be broken down and digested by fish. Some of the coarser fishes such as suckers, etc., in general are more inclined to a vegetable diet than members of the trout family. The gizzard shad and golden shiner are both vegetable feeders exclusively and for that reason have been suggested as a means of turning vegetable matter into food for larger fish of predatory food habits.

However, if not taken directly in quantities, aquatic vegetation in some form is the basic source of fish foods. The minute, free swimming life in deep lakes called plankton may equal nearly two tons per acre as a standing crop with several turnovers or crops per year. This production is dependent basically on the one-celled plants. In the Illinois River over weed beds nearly a ton of fish foods to the acre were found while over the rock and gravel bottom there were less than 150 pounds. Aquatic vegetation of some sort converts the basic elements from the water or soil and offers in turn food and shelter for various higher forms of life which in the end constitute the fish foods.

We know that where ecological conditions are such that the lower forms of water life are stepped up to forms available for fish, particularly in "rich" waters from limestone or lava formation, a greater production of meat per acre results than from our best grazing lands or even agricultural areas.

Any consideration of these problems brings out the great lack of information available and the need of thorough research if the fundamental resources of water areas are to be maintained in high productivity.

BELIEVE IT OR NOT

By Emma H. Morton, D. 6

Dan C. Brown, foreman of a telephone maintenance crew on the Cascade National Forest, lost a pair of Government-owned telephone connectors. He has explained the loss and requested relief for responsibility in a most graphic and naive manner, though Clerk A. T. Moses of the Cascade, in commenting on the 858 says "Male clerks might swallow this one, but not the ladies." Brown's story follows:

"As we traveled along the Blair Lake trail with two burros, I stopped to climb a telephone pole to make a repair. I had been carrying the bag of tools and had laid it down before climbing. The burros were packed with our outfit, as we were moving camp. In the bottom of the bag I had dropped my plug of chewing tobacco so that it would be available for refreshment for myself. One of the burros had been inherited from Dee Wright's (ex-Mt. Hood guide) string, and had been taught to love tobacco. The beast took the opportunity to bite through the bag for the tobacco while I was busy with hands and feet, and it was after I was down the pole and well on my way that I discovered my tobacco was missing and there was a hole in the bag. Then I saw that the burro was chewing the plug. I made investigation at once for lost tools. The connectors were the only ones that had slipped through. Though I searched diligently along the path we had followed, I could not find them."

A MEMORIAL WORTH WHILE

A large white pine, still vigorous and beautiful, stands in Loch Muller, Essex County, New York. A sign on the tree carries this legend:

> "To all Lovers of Nature, Greetings:
>
> On this spot in the year 1845 this tree, a sapling of 12 years, was transplanted by me at the age of twelve. Seventy five years I have watched and protected it. In my advancing years it has given me rest and comfort.
>
> Paschal P. Warren,
> June 1st. 1920,
> Age 87 years."

The fact that President Grover Cleveland was the first President to set aside forest land for national purposes is well known. It is not so well known that he, when Governor of New York, sponsored forestry conservation as a State museum. This he did in his message to the Legislature January 1, 1884. In this message he brought forcibly to the front the importance of possessing the forests bordering the sources of the Hudson, Mohawk, and Black Rivers. During his term as Governor, the sum of $5,000 was appropriated to pay for the services of experts to investigate and report a system of State forest preservation. Prof. Charles Sargent was appointed Chairman of the Commission. The report of the body led to important forestry legislation in New York among which were the laws creating the State Forest Commission and the first law for fire suppression.

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The Garden Club of Portland is seeking to have the State do away with all advertising billboards along its highways. Several other States have already decided effectively on the same move. The Newberg Graphic says:

"Oregon's stately pines and firs dotting green fields and with mountains rearing their lofty heights against her skylines is a standing condemnation of the vulgar advertising signboard which has been flaunted in the faces of visitors along our highways to tell of the virtues of this kind of gasoline or that brand of canned soup, cigarette or other commodity. The marvels of a limpid brook or daisy populated meadow lose their charms when they become the mere background for a sign. And where is there any recompense to the State of Oregon for permitting these incongruities to remain?" - District 6.

FRONT LINE OF FRIENDSHIP

"There is nothing so influential in this world as personal contact between man and man, and the nature of that contact determines the benefits that will accrue. A corporation's personality is reflected by those of its workers who are in actual contact with its neighbors. They are the corporation's front line of good will and the best public relationship is established only when they give the best service within their and the company's power." - Paul Shoup, Pres. of the Southern Pacific Ry., in the April issue of "Nation's Business."

WOOD TRIM ON AUTOMOBILES ON THE INCREASE

Until about three years ago, wood mouldings for interior trim in automobiles were used very extensively in all cars except the low price class. Then practically all motor car manufacturers specified steel for this purpose, either painted black or grained to imitate walnut. Now purchasers of cars are buying their automobiles "on appearance" and wood moulding is again being used. One Detroit company reports turning out 65 carloads of American black walnut mouldings for this purpose as well as several carloads of fancy walnut veneer. - D. 4 Bulletin.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 37 WASHINGTON, D. C. SEPTEMBER 16, 1929

MEETING ON PUBLIC DOMAIN QUESTION

At the conference of the Governors of the 11 Western States in Salt Lake City August 26 and 27, to discuss the turning over of the public domain to the States, resolutions were passed asking that the Federal Aid appropriation be increased from $75,000,000 to $100,000,000 and endorsing the Colton-Oddie Bill on forest roads, which increases the Forest Highway fund from $7,500,000 to $12,500,000. Among other resolutions, were the following:

1. Many false suppositions exist regarding the nation's forest resources.

We do not fully know the true forest condition and needs of the country, nor do we know what measures are necessary to assure adequate future timber supplies. Many unsolved problems in forestry and in range and watershed management hold back the development of sound policies and practices. In recognition of these facts, under the McSweeney-McNary law, Congress has authorized for research up to a maximum of $3,375,000 annually within the next ten years, and authorized an additional $3,000,000 for a forest survey available at the rate of $250,000 a year.

We urge Congress to actually appropriate the full amounts authorized in order to hasten the comprehensive forest survey of the whole country now started and to hasten the research studies long needed as a basis for solving watershed protection, range management, and timber management problems.

2. Under the Clarke-McNary law it is recognized that in protecting State and private timberlands from fire the expense should be borne one-half by the owner, one-fourth by the State and one-fourth by the Federal Government.

Of the $10,000,000 estimated as the cost of adequate protection, the Federal Government has met its share of $2,500,000 by only $1,200,000 while the States have met their share of $2,500,000 by $2,074,705 for the fiscal year 1929.

Since the Clarke-McNary law has authorized to be appropriated $2,500,000, we ask Congress to increase the amount actually appropriated to $2,000,000 in order that the Federal Government may keep pace with the States in meeting its share of adequate protection of State and private land.

3. We urge that sales of State or Government-owned timber located outside the National Forests be made only on the basis set up by the Forestry Service as to sustained yield and public good.

4. We urge that the present percentage of the Clarke-McNary appropriation which is allotted to States for cooperation and accomplishment in forest protection be increased.

5. We urge the preservation of strips or lanes of timber along highways that traverse national State and private forest lands and to that end commend a policy of exchange between private owners and the State or Government, whereby all suitable lanes or strips may become a permanent and reserved part of the National or State forests.

6. The Forest Service has insufficient funds for the prevention of forest fires, for preparation so that fires can be suppressed promptly upon their starting; and for the construction of roads and trails that fires may be reached promptly.

Under such conditions the Forest Service must spend large sums of money in suppressing fires in inaccessible regions after they have gained headway. Such a financial system obviously is not conducive to economical expenditure; nor to the prevention of heavy losses of timber, damage to the forest land, and to watersheds.

We therefore, urge Congress to make adequate appropriations for the prevention of fires and for their suppression in their earlier stages and for the construction of the necessary improvements to make prompt action possible. - D. 4 Bulletin

EDUCATING SMOKERS AT THE SOURCE

Several months ago the Washington office brought forcibly to the attention of cigarette and tobacco manufacturers the large number of forest fires caused by discarded smoking materials and asked their cooperation in educational work among smokers. In particular, attention was called to the striking results obtained by the Bureau of Standards in tests of fire hazard caused by discarded cigarettes. At about the same time pressure was being brought to bear on the manufacturers by various Western organizations, including one of the Districts and numerous Chambers of Commerce.

Many of the manufacturers have been conservative on this subject apparently fearing the effects of calling public attention to the fire danger connected with smoking. But there are indications that some of the companies at least are beginning to change their point of view. One of the largest companies in its weekly radio program broadcasted a forest fire warning over a national net work, and followed it up with a printed circular which has apparently been widely distributed. The warning was as follows:

"This same spirit of consideration prompts the ---------- Company to issue this warning to cigarette smokers, now that the vacation season is here:

"Please be careful how you dispose of your lighted cigarette. Please be sure that it is extinguished before you cast it aside or that you throw it where it cannot be the cause of fire. If you will have this consideration for others, much will be done to lessen the risk of forest fires which bring great loss to many communities. There is too much pleasure in a cigarette to have it be the cause of danger."

Another large tobacco company, in cooperation with the California State Chamber of Commerce, has recently put out three high-grade colored forest fire warning posters.

With the immense sums being spent by tobacco companies for advertising their products, there is an opportunity for effective forest fire publicity reaching millions of people, and it is to be hoped that further negotiations will result in further progress in this direction. - W. S.

FRENCH PROPOSES GRAZING CONTROL

"The conditions on the public lands of the Boise watershed are dreadfully bad," said Congressman Burton L. French on his return to Boise after a four-day survey along the Boise and Payette rivers.

Over-grazing and improper cutting and wholesale burning of timberlands, outside of the National Forest areas, causing erosion, and filling the river beds and reservoirs, are conditions which have been overlooked and should be counteracted at the earliest possible moment, he declared.

"I propose to ask the next congress to enact legislation that will permit the Government to control the grazing upon the public domain of the Boise watershed as it is controlled upon the forest areas," he said.

"I was particularly interested in the questions of run-off, erosion of the soil, grazing and forest conditions. The situation on the National Forest areas is splendid for the most part, but the condition on the public domain and on some private holdings outside of the national forests is utterly and unbelievably bad.

"Over-grazing everywhere has destroyed the range, and erosion is occurring in an alarming degree. From the great washes and gullies that I saw, it is apparent that thousands of tons of earth are being dumped into Black Canyon and Arrowrock reservoirs. And more will occur unless we stop the cause.

"The cutting of timber is also a question to which I have been giving attention. The timber upon privately owned land is beyond federal control and serious mistakes have been made in cutting this timber and in broadcast burning. I am told that this policy has been discontinued by the private owners of timber land and I saw some areas of recent cutting where effort is being made to retain the growing of small timber. This policy should be encouraged.

"Looking to the future, the closest team work should be done with the National Forest officials who are doing a fine service under the direction of Guy B. Mains, Supervisor of the Boise forest. Particularly we should stop overgrazing, if we would correct soil erosion; and we should encourage the growth of a ground-cover that will conserve and hold back moisture and lay the foundation for future storage without reservoirs." - Idaho Daily Statesman, August 14, 1929

DEATH OF DEAN MOON

Franklin F. Moon, Dean of the New York State College of Forestry and a pioneer and leader of American forestry, died on September 3, two weeks after having undergone an operation. He had been suffering from acute attacks of abdominal disorder for a year. Dean Moon was born 49 years ago in Pennsylvania, and attended Amherst College and Harvard and Yale Universities. In 1909 and 1910 he held the position of State Forester of the New York Forest, Fish, and Game Commission, and from 1910-12 was Professor of Forestry at the Massachusetts Agricultural College. He joined the faculty of the State College of Forestry in 1912 as Professor of Engineering, and became dean when Hugh P. Baker resigned that position a number of years ago. He spent the summer of 1912 studying forestry practice in Germany, France, and Switzerland; and in 1926 was a delegate to the World's Forestry Congress at Rome, and afterward spent a year mainly devoted to a study of forestry education in eleven European countries. He was author of "Elements of Forestry" and "The Book of Forestry."

Governor Roosevelt of New York paid the following tribute to Dean Moon:

"The sudden death of Franklin Moon, dean of the State College of Forestry, comes to me as a great shock. I saw him not long ago and he seemed to be in fine health and spirits and very much interested in the program of reforestation for the State of New York.

"Under Dean Moon the State College of Forestry at Syracuse has become one of the most important institutions of its kind in America. The effect of the college instruction under his supervision has been felt through its graduates not only in this State but in every part of the country which is actively engaged in the rebuilding of our depleted forests.

"The State has suffered a great loss in the passing of Dean Moon in the prime of his usefulness."

WILL C. BARNES WRITES A LETTER

Hammerfest, Norway
August 20

"I'm writing this on board ship and we may pull out before I can mail it from this lovely little place at the upper end of Norway.

"We have just come from 7 days at Spitsbergen, a most interesting trip. At Kings Bay we saw the hangar and mooring post used by Nobile on his unfortunate expedition. Also the monument to mark the spot where Amundsen took off to look for him and never came back. It was warm and pleasant there although the mountains were snow-capped and the bay was full of icebergs from little ones to some as big as the Capitol.

"We struck the North Cape and landed. Some of the people climbed to the top - an awful pull up a good trail, but not for the Barnes family. Then we came here and are taking on coal. The town is a whaling and fish town and fairly reeks with the smells of decayed whales, drying fish, and such things.

"We saw one small vessel come in that had been out in the Arctic since March. They had 10 polar bears in cages on the decks, the hold was full of seal skins and fish. Such a sight! The boat was not over 60 feet long at the best, with 8 men for the crew. We watched the men unload the bears and transfer them to cages for shipment to Hamburg.

"This whole country is a surprise - 300 miles above the Arctic Circle we picked daisies and lovely blue bells. Found some yesterday at the North Cape.

"The scenery is grand beyond description and this little boat which once belonged to King Edward is a dandy. We have a mixed lot of people - Americans, English, Poles, Swedes, Norwegians, Danes, a German or two, a girl from Spain, no end of French, and a Panamanian. At the dinners it's a babel of tongues believe me. We are going through the Norwegian fiords always in sight of land and for miles between mountains that remind us of the Rockies. Very much like Alaska in many ways, only every level spot along the coast has a farm on it. They were putting up hay yesterday at the North Cape. We shall reach Bergen on the 29th and sail for home the 31st.

"If you want to take a real rest take this trip. We eat, sleep, play cards, walk the deck, and make an excursion on shore almost every day except the three days between the Cape and Spitsbergen. Our stateroom is nearly as large as our bedroom at home. There's a fine piano to play, and a good string orchestra. We have met a lot of lovely people on board as we did coming across. Stockholm, Oslo, Bergen, Gothenburg are all fine cities, but we think Copenhagen the best of them all."

RETROSPECT

By E. N. Munns, Washington

With a kindred spirit, it has been my pleasure to retrace some of the historic routes of the early explorers and adventurers on the Virginia shore. To make a trip through some of the region they saw and first reported upon is indeed a real pleasure, and it requires no extraordinary imagination to appreciate the emotions which stirred the breasts of these men as they entered the Chesapeake and sailed up the wide stretches of the Powhatan in the spring of 1607. Those were hours that offered the amplest compensation for the hardships which these adventurers had endured. They had just finished a tedious and dangerous passage on unknown seas, peopled with the terrors that the superstitions of ages had surrounded the unknown. Even in the bleakest period of winter, under leaden skies, and with sombre landscapes, the country they had reached would have been delightful to them, but clothed in the verdue of a Virginian May, when the greenness of the foliage and the tints of the wild flowers have their deepest and softest coloring, it was quite natural that visions of an earthly Paradise should have arisen before their eyes, accustomed for so long a time to the heaving plains of the Atlantic. The lofty trees on the banks, representing many familiar and many new varieties, the noble breadth of the river, the balmy air laden with the odors of expanding leaf and blossom, the clearness of the atmosphere which produced such striking vividness of coloring, the bright sunshine, the strange birds adorned with brilliant hues, the schools of fish breaking the surface of the stream into patches of flashing silver, the painted savage peering through the foliage at the little fleet as it passed slowly along, all united to create a novel scene touching the sensibilities of the dullest and most prosaic of the adventurers. Nor was it less inspiring when they recalled that they were the first persons of their race to look upon that beautiful expanse of river and forest which for a time almost incalculable had existed just as they saw it then, save for an occasional Indian clearing.

Today, the region is still lovely, with the liveliness that comes upon the landscape when touched by the husbandman. Cultivated fields are now mixed with forest giving the landscape an air of habitation which does not consciously intrude upon one's thoughts. True, farms there are and houses there are, but the woods are there also. The region has been the scene of massacres, of raids, of battles, of industrial and agricultural development and of decline, but through it all, and after it all, the forest still retains its dominance. The stream banks are clothed with trees, the impoverished and eroded hills have again come up in forest, and few indeed are the acres that are not clothed in Nature's noblest garments.

But, while one can wax sentimental over the Virginia forest, the practical also intrudes as one recalls the history of the region, notes the injuries that trees have suffered from fire and disease, and sees the cordwood on its way to the paper mills. Here are these lands, once forested, cleared, eroded, abandoned, forested, cleared, eroded, etc. They have passed through the cycle at least twice, perhaps have gone through it four or five times, yet the forest still attempts to cover man's mistakes and heal the wounds caused by his mismanagement. One cannot help but wonder whether in the long run that land continually in forest, if there has been any such, has not yielded fully as much in the way of money return as the cropped land. Food we must have; clothing we must have; shelter we must have. Yet, how much grief could not the early colonists, the later planters, and the present-day husbandmen have saved themselves if they had but managed their soil as a resource and considered the woods as a crop.

YE EDITOR DISCOVERS

The Director of Information has allotted to the Forest Service for printing during the fiscal year 1930 $61,700. This is an increase of $11,700 over last year. The Forester has set up the following sub-allotments:

Administrative Printing	$30,500
Research Publications	17,000
Other Branches and the Districts	4,200
Map folders	8,000
Reserve	2,000

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Expenditures from FF for the last 10-day period in August amounted to $662,056 bringing the total expenditures from July 1 up to $1,555,579. The expenditures to August 31 last year were $481,925. Districts 1 and 6 were hit hardest, with $435,000 and $160,000, respectively, for the 10-day period. On September 3 District 1 reported the weather cool and showery with good rains on some fires but that while conditions were improved much work remained to make the fires safe. District 5's report of the same date was that the weather was normal and no large fires were burning. District 6 reported the Dollar Mountain fire on the Colville uncontrolled, with 75,000 acres burned over. The Chelan fire near the Canadian border was reported still troublesome. All other Washington fires were considered safe. There were no uncontrolled fires in Oregon although a fire on the Mount Hood Forest was not yet entirely safe. With no rain predicted the situation was still critical. The figures up to August 31 indicate that the total area burned this year inside the National Forests in the six western Districts is 553,355 acres.

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An editorial in Hunter-Trader-Trapper for September says: "Forestry in the United States is on the eve of a new era which promises many difficulties, even excitement, in the adjustment of problems that must come up for solution in the near future. The almost visible end of our virgin timber and the practical assurance of serious reduction in lumber supply will develop situations for administrative government requiring the highest type of constructive statesmanship during the next three decades. The problem might be solved if we knew how to produce forest trees more rapidly. If there ever was a need for research in the interest of public welfare it exists to-day. ...Lumbermen and foresters are looking for this Messiah of forestry. He may be a genius of research or one of those fortunate observers who by accident finds timber shortage is to be prevented. The future needs him now."

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Mr. Betts tells us that it is estimated by the Bureau of Aeronautics of the Navy that of the 10,000 planes contemplated for construction for both civil and military use during the present year, at least 9,000 will have wooden wing structure, although metal has almost completely supplanted wood in the body or fusilage of the plane. In military craft metal propellers are used almost exclusively, while in commercial planes, which greatly outnumber all other types, the wooden propeller is still standard. This is attributed to the fact that the metal propeller is much more expensive. It is interesting to note in the case of the larger passenger-carrying machines like those manufactured by Fokker that plywood wing covering is now used in place of the usual doped linen fabric covering.

NATIONAL LUMBER MANUFACTURERS ASSOCIATION ADOPTS CONSERVATION PROGRAM

Good attendance and enthusiasm marked the meetings of the Directors and the Trade Extension Executive Committee of the National Lumber Manufacturers Association and of regional association secretaries held in Longview, Washington, last month. The decisions arrived at may be summarized as follows:

1. Forestry promotion program adopted.
2. Regional Associations requested to adopt uniform car shipment cards.
3. Secretary and Manager Compton's recommendations regarding surveys of lumber supply, demand and consumption in promotion of orderly self-control in the lumber business were adopted, including in addition to purely statistical efforts: (a) an affirmative forestry policy including public policies and a workable plan for stabilizing the lumber industry in order to conserve the remaining supply of virgin timber; (b) creation of a Federal timber conservation board; (c) establishment of a code of marketing practices.
4. Research program adopted substantially as submitted, including bridge floor loads and aircraft study.
5. Continuation of text book revisions temporarily suspended.
6. Continuation of retailer consumption survey along present lines.
7. Adoption of general advertising policy for 1930, emphasizing outstanding properties of wood in national and class magazines, including, possibly, an elaborate radio advertising program.

The proposed forestry program urges the need for pressure upon Congress to build up Federal appropriations under the Clarke-McNary Law to match those of certain states and private cooperators; urges that the study of forest taxation and forest insurance be carried on to completion with all possible vigor; and that special emphasis should be placed on the importance of initiating and pushing to completion the whole program as contemplated by Congress under the McSweeney-McNary Law.

The tentative program includes the "development of a workable plan for stabilizing the lumber industry on the Pacific Coast in order to conserve the remaining supply of virgin timber from the rapid and unprofitable exploitation to which it is now subjected, and to remove the deadening influence which the present situation imposes upon the spread of improved forest practices in other parts of the country."

On the subject of expansion of public forest ownership the program declares, "What is needed is a nation-wide, comprehensive program for public forest acquisition, coordinating clearly the Federal and State responsibilities and defining the classes of land and the particular areas accordingly to be acquired."

LODGEPOLE PINE FOR PAPER

"Der Deutsche Forstwirt" reports that investigators and economists in Germany are enthusiastic over the lodgepole pine of western America as a means to supply their rapidly growing paper requirements. The wood has proven well adapted to the present predominant sulphite method of manufacture, and while spruce wood yields more and better pulp in inverse ratio to the rate at which it has grown, this pine gives a high grade of cellulose in good quantity regardless of growth-rate.

The wood worked with in Germany came from the famous exotic tree plantations of Senator Tigerstedt in South Finland. It was cut from trees only 16 years old. Tigerstedt estimates from his experience that lodgepole pine, grown from seed of suitable heredity as to site, will produce under a short rotation fully twice as much wood per acre as it is possible to get from the native or common pine of Europe (Pinus sylvestris).

Prof. Dr. Carl Metzgar points out that the pulp-mills of Germany now import each year 2,000;000 metric tons of wood to meet raw material needs. In view of the continued rapid expansion of the demand for paper and other pulp products, he strongly advises planting of lodgepole pine in Central Europe, asserting that trial plantations indicate for it a final crop yield of about 3,000 cubic feet, or 30 to 35 cords of wood, at the end of a 25 to 30 year rotation.

The lodgepole pine appears to thrive where recently planted in the Adirondack Mountains and New England. It is to be hoped that this tree may fill the breach when Canadian wood supplies diminish. There is no doubt that the pulp and paper industry of the eastern United States is on even more precarious footing than that of Germany in respect to raw materials.

Seeds of this pine were planted experimentally at Mont Alto in 1928 and developments will be watched with interest, since the tree would seem to hold promise for forestry in Pennsylvania. - Prof. George S. Perry, Pa. Dept. of Forests & Waters Service Letter.

GOVERNMENT CAUTIOUS IN DEALING WITH NEWSPAPERS

If the U. S. Government is as particular and careful in all its dealings as it is in dealing with a newspaper publisher over a two dollar ninety cent legal notice for publication, it seems very strange to us that such scandals as the "Teapot Dome," the Sinclair, Doheny and Fall affairs should ever occur. In fact it looks impossible.

In this issue of the Journal is a notice of National Forest Drift Fence Construction for which the publisher is to receive the paltry sum of $2.90, from the U. S. Government providing he will attach his signature to a stack of affidavits and other legal papers, which is about 1/2 inch in thickness, there being a dozen or 15 papers to fill out and sign and on top of that, he must take all these papers to a Notary Public and swear that the signature is his own and that the notice was published according to the Government's instructions, which are printed in very fine type and consist of several pages. It took the editor the biggest part of one hour to read all of these instructions and another hour or two to affix his signature to all of the affidavits and papers and to visit the Notary to whom he pays a fee and then he waits for several weeks while numerous high salaried government clerks inspect and re-inspect these papers, making sure that the publisher is not a crook and trying to swindle the Government out of $2.90 before he receives his pay.

It all appears to be rather silly and a waste of time and money, to us; however that is the way our Government does business with a newspaper publisher with $2.90 involved and as it is our Government, we like the method and we are satisfied but again we say if our Government is as particular and careful in all its dealings, how in the name of heck do such scandals as the "Teapot Dome" occur.

If anybody can figure that out, the editor will take a nickle of his $2.90 (when he gets it) and treat with a good cigar. - Grant County Journal, of July 4, 1929

THE PROPHET GETS A SHAKE DOWN

From the Tucson Star of June 2, 1882: "In sight of Tucson are the forest clad Catalinas which will one day supply the lumber trade from the Colorado River to the Gulf of California." The Star prophet was considerably off, or at least so up to this time. He apparently could not foresee the demand for lumber in the next forty-two years. As a matter of fact the forest clad Catalinas could not even supply the 1929 demand in Tucson. - D. 3 Bulletin

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIII No. 38 Washington, D. C. September 23, 1929

MICHIGAN KIWANIS CLUBS DEDICATE PLANTATION

By E. A. Sherman

Dedication of the 10,000-acre Kiwanis plantation on the Huron National Forest was made on August 30. The exercises were held on the Forest, with a very good attendance. During the afternoon the visitors were taken to the various plantations, and an excellent camp supper was served at the planting camp. Following the supper there was a program, including music by the Rose City band, singing by the Saginaw Glee Club, and a number of speeches. The chairman of the meeting read a letter of greeting from the Secretary of Agriculture; the presentation speech was made by Judge Black of Flint, and the acceptance speech by Mr. Sherman. Addresses were also made by the State Highway Commissioner, representing the Governor of Michigan, and by Roy O. Woodruff, Representative from that district.

This undertaking of the Kiwanis Clubs of Michigan is unusual and unique, and while they are not certain of continuing on the present scale, they are hopeful of doing something each year. The 10,000 acres planted by the clubs together with the planting done by the Forest Service wholly at Government expense make an aggregate of 24,000 acres of plantations in a fairly compact block lying within the Huron National Forest and south of the Au Sable River. Thus far the results have fully justified the effort, although the site has received very severe criticism from several sources. In fact, these plantations have been pointed to as a horrible example of the "worst first" theory.

Upon the whole the survivals have averaged 85 per cent. In exceptional cases 97 per cent survivals have been secured. The costs, including stock overhead and other properly chargeable items, have averaged $3.34 per acre. The costs to the Kiwanians (which did not include stock, supervision, or overhead) were $1.94 per acre.

In this splendid acreage - probably the largest single artificial plantation in America - has, on the banks of the Au Sable River a site having the approval of a committee of Michigan lumbermen appointed to select a suitable location for a memorial which at a cost, possibly reaching $100,000, it to be erected to the memory of the pioneers of the lumber industry in that State. The site approved is on the bank of a high bluff in a bend of the River from which a superb view is obtained. Just back of this point and encircling it east, south, and west the Kiwanis and other forest plantations are rising to form a fitting background of - let us hope - everlasting green.

RECREATION VERSUS TIMBER PRODUCTION ON THE STATE FORESTS

By Prof. W. H. Horning, Pa. State Forest School

The use of the Pennsylvania State forests for recreation has shown such a phenomenal growth that it bids fair to revolutionize all of the original ideas held concerning the objects of State forest management. These objects as expressed by the founders of the State forest system were threefold. Timber production was given as the primary purpose, watershed protection came second, and healthful outdoor recreation was stated as a third purpose, more or less incidental to the others. Since the founding of the State forests, many changes have taken place in the whole fabric of our social and economic life. The almost universal use of automobiles and the development of road systems have enabled more and more people each year to discover the enchanting beauty spots hidden away in all our State forests. Literally millions of persons go annually to the forests and enjoy the recreation freely offered to all. Recreation has now come to outrank timber production in importance on certain forest areas. This use has been allowed to grow up with a minimum amount of regulation and control. The growth has been so great, in certain areas, that already it absorbs an important share of the forester's time. It is the belief of the writer that unless further development is made to take place in accordance with some preconceived plan, designed for efficiency in administration, the forester may find the management of recreation absorbing nearly all of his time.

Another feature of this question that must be considered in our forest management policy is the fact that there is a definite conflict between recreational use and commercial timber growing, when attempted on the same areas. The orderly growing of timber crops means that ripe timber must be cut. It is this that produces the conflict. Most people are park minded and object to the cutting of trees on a commercial scale if carried out on areas frequented by them. Thus far it is true that this conflict has been unimportant on the State forests. This is due to the fact that so little of our timber is ready for cutting. The time is approaching, however, when our timber will reach maturity, whether it be in the present generation or the next, and the forester will be embarrassed by this conflict. The U. S. Forest Service has had to face this problem already on certain of the National Forests. They are dealing chiefly with mature timber in which regulated cutting must be carried out for the purpose of placing the forests on a sustained yield basis. Where cutting, even of the conservative kind, has been carried out, close to recreation areas, violent protests from the recreation interests have ensued. People simply refuse to see beauty in crops of young growing trees, however thrifty they may be. Economic problems of this sort are often settled not on their merits but by the eloquent pleading of some special interest. A reasonable compromise between these conflicting uses must be worked out so that our forests shall yield the maximum return in public satisfaction without unduly sacrificing the original object of timber production.

The answer of the U. S. Forest Service to this problem has been to adopt a policy of segregating recreational use from commercial timber cutting. In certain cases this means the setting aside of about ten per cent of a forest area for recreational use. In doing this they recognize two classes of recreational use which are provided for separately. First comes formal recreation with hotels, golf courses, auto roads, and other accessories. The second class is the wilderness kind, dear to hunters and fishermen, demanding freedom from auto roads and all of the annoying impediments of civilization.

Here in Pennsylvania the problem differs in that we are dealing for the present with an immature forest. In due time however we too will have to carry out regulated cutting for the purpose of placing our forests on a sustained yield basis. When that time comes this phase of management may be seriously hampered, if we do not, when it is still possible, adopt a plan for concentrating recreation on limited areas of our forests.

When we attempt to set up a plan to concentrate recreation areas, the question of land classification, for this purpose, comes up. It becomes necessary to distinguish between areas where timber production is the primary use and areas where recreation shall be the primary use. When we attempt to make such a classification the question at once comes up as to what our standard shall be in measuring the relative value of land for the different uses. It is the purpose of this paper to suggest a standard which shall serve this need.

Recreation is something that cannot be bought and sold as so much per pound or foot, so it is difficult to assign definite values to it. Recreation of any particular kind means so much more to one person than to another that he is willing to travel greater distances and spend much more time and money than the other person in order to enjoy it. However, no one can say that the recreation enjoyed by the one cost him more than it was worth or that in the other case it was worth more than it cost. - Clipped from Service Letter, Pa. Dept. of Forests and Waters. (To be concluded in Sept. 30 issue)

LESSONS FROM SAMPLE PLOTS IN THE SOUTHWEST

By G. A. Pearson, Southwestern For. Exp. Sta.

In the examination of a series of western yellow pine cutting plots established fifteen years ago on the Coconino National Forest, the outstanding feature is the superiority of national reproduction on the seed-tree cutting as compared with group selection and shelterwood methods. The number of trees per acre over 11 inches dbh in 1919 was 3.6, 14.2, and 20.1, respectively. (Actually the shelterwood method amounts to nothing more than a light group selection cutting). Of trees over 20 inches dbh the corresponding numbers per acre were 2.7, 3.8, and 7.0. Nearly all the present reproduction is of 1919 origin. Counts in 1920 gave 2,825 seedlings per acre for the scattered seed tree area, 3,940 for the group selection, and 7,875 for the shelterwood. These numbers, it should be noted, are very nearly in proportion to the number of trees over 20 inches dbh. Annual counts on permanent plots and strips up to 1925 indicated the highest percentage of survival on the seed tree area. To present an adequate picture at this time requires a detailed survey on a large scale. Careful observations, however, point convincingly to the scattered seed tree area as being better stocked than the others from the standpoint of even distribution and size of seedlings.

Before concluding offhand that scattered seed tree cutting gives the best reproduction in western yellow pine, it is well to ask ourselves whether the method of cutting constitutes the only essential difference between the areas. This question is difficult to answer. To all appearances the sites are similar except that the scattered seed tree area slopes gently to the north while the others slope gently to the south. It is doubtful whether this is important because in this region southly aspects, unless of steep gradient, are fully as favorable to reproduction as northerly aspects. All three areas were severly overgrazed up to 1919 when they were fenced, and since then only very light grazing has been permitted. It is definitely known that grazing damage is not important within these areas.

Grass competition is, if anything, most keen on the scattered seed tree area, but since this did not develop until the seedlings were about five years old, it has not been a deciding factor.

Granting that method of cutting is the deciding factor, how has this brought about the now evident relation in survival and growth? In the first place, the heavy cutting on the scattered seed tree area should result in less tree competition than on the other areas. This is obviously the case. The groups of blackjack which numerically make up the greater portion of the stand left on the other two areas are conspicuously absent from the seed tree area. A large quota of the originally greater numbers of seedlings on the group selection and shelterwood cuttings is on the north and east sides of tree groups where shade favors germination but interfers with later development. It is well known that practically no seedlings survive their fifth year within 30 to 50 feet on the north or east side of a large group of older trees. The survival which really counts is mostly beyond the 50 foot zone, and the proportion of area falling into this class is much higher under the seed tree method than under the other methods of cutting.

Another factor in favor of the seed tree method is the increased area in "stump patches" or groups of stumps. A stump patch corresponds roughly to the area shaded by the group of trees before cutting. These patches are usually conspicuous by their fine stands of large seedlings. From the standpoint of tree competition, one has a right to expect better reproduction under the scattered seed tree method of cutting than under the other methods, provided that enough seed is born by the smaller number of seed trees. There is another angle to the competition question. Bunch grass, particularly Festuca arizonica, is favored by heavy cutting. If overgrazing had not held the grasses in check up to the year of germination we might have a different story to tell. Incidently, the experience here points out the way to employ grazing as a silvicultural measure. As long as no seedlings have started, let the stockmen overgraze to their hearts' content; when a good catch of seedlings appears, move the stock.

Even if the apparent merits of the scattered seed tree method are upheld by further investigation, this method could not be recommended in general practice. Obviously, it would be poor business to cut halfgrown trees in order to make room for seedlings. Moreover, the scattered seed tree method would eventually lead to even-aged stands which are of doubtful applicability in District 3. The method would, however, prove exceedingly practical under certain conditions, as in over-mature stands where few suitable seed trees are available, or where eradication of mistletoe or other pests calls for sacrificing immature trees.

FRANK T. SMITH

By the death of ex-Ranger Frank T. (Cap.) Smith, the Forest Service has lost another of its pioneer members.

Cap. Smith was a pioneer in every sense of the word. He was born in New York State in 1856, and at the age of 19 joined the wild and turbulent horde of gold seekers in the stampede to the Black Hills Country in 1875. Gold was discovered in the Black Hills by the Custer Expedition in 1874 and as soon as the news of this discovery leaked out the gold rush began, notwithstanding the fact that the region was Indian territory and closed to white settlement. Cap. Smith was among those whom the United States troops rounded up and, after burning their outfits, herded back toward white settlement. He was also among those determined and persistent ones who, eluding the troops, made their way to the scene of the gold discovery on French Creek and who arrived there in time to help lay out the townsite of Custer in the summer of 1875.

In 1902 President Roosevelt appointed his good friend Seth Bullock Supervisor of the Black Hills Forest Reserve. Bullock found the Forest organization in a bad state and immediately set about reorganizing the force. He was himself a good administrator and a good judge of men. He dropped practically all of the members of the force and began picking new men to fill the vacancies. Cap. Smith was among them, but when he learned that his salary would be $60 per month and that he would be required to furnish and feed three saddle horses, furnish his own quarters and other equipment needed on the work, he declined the appointment. Bullock, however, insisted that he take the job, at least for a time as a matter of public duty, and to his argument Cap. capitulated. He entered on duty on September 1, 1902, and remained in charge of the Crook Mountain District of the Black Hills Forest from that time until his retirement April 15, 1925. On that date he was compelled to retire on account of ill health, largely brought on by over work during the strenuous fire season of the previous year. Upon retirement he refused to entirely separate himself from the Forest Service. He moved to Sturgis, South Dakota, on the edge of his ranger district where he imposed upon himself the duties of assistant ranger and proceeded to keep an eye on the succession of the three young rangers who have successively administered the district since that time. He declared that as along as he drew a retirement check he was still on the payroll. He retained his Forest Service badge and marking hatchet and earned his check by acting as a fire keyman for the purpose of recruiting fire fighters, and by taking up material on dry wood and post sales. Sometimes, during the ranger's absence, he made small sales for dead material and rendered valuable service to the rangers by giving them many tips on the history of certain cases, or the location of section corners and land lines. In April 1929 he was stricken with paralysis and passed away at the Veteran's Battle Mountain Sanitarioum at Hot Springs, South Dakota, on July 19. - From an article by Geo. A. Duthie, D-2 Bulletin.

FINDS 'PATIENTIST' ANGLER

Seth E. Gordon, conservation director for the Izaak Walton League of America, has finally found the most patient of all fishermen, namely, the bears of Yellowstone National Park, according to an account of his observations there reported by the National Park Service of the Interior Department.

Mr. Gordon, traveling through Yellowstone Park with his wife and daughter, saw forty-nine of these bears, and while not all of them were fishing, Mr. Gordon voiced the opinion that they had more patience when it comes to waylaying the elusive pisces than the man who sticks the bulky end of his pole into the mud and lies down for an afternoon's nap awaiting a bite.

When the park season closes and the bear dumps are barren of food, Bruin is likely to take himself off to the bank of one of the many fishing streams in the Yellowstone and go on a Friday diet. Mr. Gordon has learned that no tackle, boots, or baskets are needed; all that is demanded is patience. Lying down beside an attractive pool, the bear awaits his prey and tosses them onto the bank as they go by. Through his patience he is a fisherman supreme.

Park officials have placed no limit on the number of fish allowed to each bear. During the tourist season Bruin is only an occasional fisherman, and the officials believe that any one who fishes with only a hairy paw and a world of patience for tackle is entitled to what he catches. - The New York Times, Sept. 5.

YE EDITOR DISCOVERS

In 1910 we had some men in the Service who rode 100 miles on horseback in 24 hours - changing horses of course - which at that time was considered a pretty good record. But, note what District 3 has to report on a recent long distance record: "Twelve District 3 men took off from Flagstaff at 7:53 A. M. Saturday for Montana, with Wilson and Jones of the District office, arrived at Salt Lake City at 11:50 A. M.; at Missoula, Montana, their original objective, at 5:25 P. M.; and at Kalispell, Montana, their ultimate objective, where District Forester Kelley and Inspector Loveridge have established field headquarters, at 7:10 P. M." (As we figure it, this would make approximately 900 miles in 11 hours and 17 minutes.-Ed.) "Considering that the request was not sent from Kalispell, Montana, until 4:52 P. M. Friday and not delivered in Albuquerque until after 8:00 P. M., and considering too that the plane used had already been hired by other parties for the day, and had to be brought from Grand Canyon airport to Flagstaff to make its start, very creditable time was made by all hands concerned. At Kalispell the District 3 reinforcements found themselves at the very center of operations. Snappy action like this gives us pride and confidence in the organization and may become a factor in revolutionizing fire mobilization plans, since it is apparently possible to secure almost immediate delivery of men from great distances to other districts. The heretofore localized load of this or that stricken fire district promises, in the future, to be shared by their more fortunate neighbor districts much more readily and generally than in the past."

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On September 5, Senator King, of Utah, introduced S. 1594, A Bill "To establish a branch of the Department of the Interior in one of the public-land States, to transfer to such branch certain bureaus and offices of the Department of the Interior, and for other purposes."

Section 2 of the bill is as follows: "The Forest Service of the Department of Agriculture is hereby abolished. All authority, powers, and duties held, exercised, and performed by the Secretary of Agriculture in and over the Forest Service of the Department of Agriculture or in and over any business arising therefrom or pertaining thereto, or in relation to the duties performed by and authority conferred upon the Forest Service pursuant to law, shall hereafter be vested in and exercised and performed by the Secretary of the Interior. All officers and employees now employed in or by the Department of Agriculture and occupied exclusively with matters pertaining to the Forest Service are hereby transferred to the Department of the Interior without change in classification or compensation. All unexpended appropriations available at the time this Act takes effect, in relation to the Forest Service of the Department of Agriculture, shall be available for expenditure by the Department of the Interior, in the same manner and to the same extent as if the Department of the Interior had been directly named in the laws making such appropriations. Upon the establishment of the branch of the Department of the Interior as herein provided, the administration of all matters transferred from the Department of Agriculture to the Department of the Interior, pursuant to this section shall be conducted at such branch."

Section 3 of the bill would appropriate $1,500,000, or so much thereof as may be necessary, to be expended by the Secretary of the Interior for the purpose of procuring a suitable site and the erection and installation thereon of a suitable building and equipment for such branch of the Department of the Interior.

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The vacancy caused by the resignation of S. H. Marsh as District Inspector of the

Southeastern States will be filled by the transfer of C. F. Evans from the Gulf States District. W. R. Hine, State Forester of Louisiana, has been selected to replace Mr. Evans. These changes will be effective about October 16.

THE D - 8 TRAIL MAN SAYS

We chased off a bear last night. I smacked him in the after gear with my .22 and he did the opening and closing act, closing on about 30 feet at a jump and beat it out over the muskeg.

This morning at 4:30 am. I was rudely awakened with a loud bang and there stood Jake in his pajamas (the kind he wears all day, you know with the sag in the seat) with a cloud of smoke between him and whatever he was blasting at.

They sure do get into us good. One was back and tried to crack the cabin while we were gone today. They ought to fence in this place and call it a circus. The one that was here today reached through the bars of the window and rubbed his old muddy paws all over the oilcloth on the table.

We have two crosscut saws nailed across one window and I hope he tries to come in backwards next time.

PITY THE POOR FISH

The James' River Guide (1840) has this to say of Peoria Lake ... "It has little current, and the water is beautifully clear and transparent, so much so, that the fish, of which there is great abundance, can be distinctly seen swimming about, and performing their various evolutions, far beneath the surface."

But you should see that old swimming hole now! One would need a bath after a gentle dip in its muddy water, for the concentration of cities, manufacturing and other human human enterprise along the Illinois River, of which the "Lake" is a part, have changed it into a veritable "sink hole of iniquity." Much bluff land, once forested, has been cleared and has eroded, and still is washing. Improper agricultural methods are resulting in the loss of the top soil on many acres. Overgrazing has directly caused much soil to wash. Many fish used to be caught in the waters of the Illinois River for the Chicago trade, but at Peoria they have been so killed out that those now found on the market are largely imported from the Great Lakes or the Atlantic.

This history of the Illinois can be duplicated for most of our streams, particularly in the agricultural and industrial regions of the East. Apparently there is real need for a national program of fish conservation, no less than of game or of the soil, and in such a program forests and forest management should have a prominent part.

But where is the Moses who will lead the fishermen to the rescue of the poor fish? - E. N. M.

FORSLING UNDERGOES OPERATION

Director C. L. Forsling of the Great Basin Experiment Station, while at Cedar City several days ago, was stricken with appendicitis and underwent an operation. He is in the Cedar City hospital and reports are to the effect that he is getting along nicely. His many friends will wish him a speedy recovery.

MCINTYRE LEARNS FIRE LESSON IN THE AIR

Recently I sat for an hour in a tri-motor Fokker, flying from Los Angeles to Caliente, and while I gave a perfect imitation of a statue in chalk, I am sold on air travel. The trick is to relax, let it be said you are "air conscious".

If you don't relax, take it from one who knows, you are going to feel as taut as though you have been standing on the edge of a skyscraper for an hour making up your mind to jump.

While winging along at 125 miles an hour, the pilots mate passed through the aisle and inquired: "Not frightened, are you?"

"Ha, Ha!" I replied. (Maybe it was "Ho, ho" - it is pretty hard to remember exactly with so much noise and confusion). But anyway, it was packed with nonchalance. As usual I am my nonchalantest when scared goofy.

I have one of those phoney thinking apparatuses that reacts to unimportant details like the snap of a rubber band. While others were marveling at the waves of fleecy white clouds, the jig-saw puzzles of landscape, and the aquamarine blue of the ocean, I was entranced by an ash tray receiver at my chair-side warning: "Prevent Forest Fires."

And I never thought before how much damage could be done by flipping a lighted cigarette out of an airplane window. You learn things traveling - even in the air. - O. McIntyre, in D. 5 Bulletin.

HOW TO KEEP FROM GETTING LOST

In case you go into the mountains and get lost remember that you can always get the game warden to come to your rescue. Kill a doe or catch a trout under six inches and the game warden will get you out of the woods. If this fails, start a camp fire without a permit and rangers will extricate you from your dilemma. - Blue Mt. Eagle, 7/17/29

BELIEVE IT OR NOT

According to the Bulletin de la Société Forestiére de Franche-Comté (June 1928) the kauri pine Agathis (or Dammara) australis of New Zealand reaches a larger size than any other tree, although it does not attain the diameter of Sequoia or the height of some eucalypts. The largest known specimen measured 23.6 feet in diameter and 108 feet to the first limb, and contained 282,400 cubic feet of wood. One log of another tree was 26 feet in diameter and 46 feet long, and yielded 188,000 board feet of sawed lumber.

It is profitless to new areas to open them to agricultural development and production. Their products, coming on a market which is already supplied, will not be profitable to any such new area, and they will depress the agriculture of areas already developed. There exists now a vast acreage of submarginal lands which is cultivated at the expense of a low standard of living, and which is really needed for reforestation, in aid of flood control and the preservation of such lands for succeeding generations which may conceivably need them. - Secretary Hyde in an address before the National Educational Ass'n. at Atlanta , Georgia, July 4.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people*** Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII No. 39 WASHINGTON, D. C. SEPTEMBER 30, 1929

DOUGLAS C. INGRAM

A TRIBUTE

By Jno. D. Guthrie, D. 6

The disturbing news came into the Portland office on the night of August 13 that Douglas C. Ingram and Ernani St. Luise were missing on the Camas Creek fire on the Chelan. From then until the morning of August 24, every member of the Service who knew Doug Ingram was hoping, although toward the last but vainly, that by some miracle he would yet be found alive. Then, after ten days of anxiety, on August 24, the word came out that their bodies had been found on a steep slope on the ridge between McFarland and Squaw creeks, about 2½ miles from where they were last seen on the afternoon of August 13.

Although most of their clothing had been burned, the position of the bodies showed plainly that there had been no struggle, and that in all probability they had been overcome by gas before the flames reached them. They were lying very near together, faces down, in a peaceful attitude.

The passing of these two young men was indeed a tragic one. Young Ernani St. Luise, from Chelan, Washington, was a very promising athlete at the University of Washington, and was said by all who knew him to be a fine type of young man.

Many Forest Service people knew Doug Ingram, and all who knew him liked him and were his friends, for Doug was always friendly. His intense interest in plants, his scientific knowledge of them, his great enthusiasm for his work in grazing studies and range management, he imparted to all field men with whom he came in contact. Doug always keenly appreciated the field man's point of view; having been a Forest Ranger for years, he knew their problems and their troubles. An industrious, eager, and conscientious worker, he would not spare himself to do the job as well as he knew how. His collection of forage and range plants was probably the largest ever collected by any member of the Forest Service, and I am told was the most complete collection in that his notes were fuller and more accurate than those of many better known collectors. He collected many rare and little-known plants in D-6, and just a few days after his tragic ending, there came official notice from Washington, D. C. of the naming for him of a new plant species which he had collected and sent in. It would have pleased him to know that Silene ingrami had been so named. His work last spring on the loco problem in Texas is understood to have been of a very high character and to have further increased the official regard for his knowledge of plant life, already pretty well recognized.

He was a splendid photographer, and some of the best photographs in our collection were taken by him; his photos of wild or native flowers and plants are exceptionally well done, both as photographs and as records of the plants themselves. Here again is shown his real zeal for science - the camera which he used was an old, very bulky and cumbersome one; but he would load himself down with it, either afoot or horseback, regardless of the temperature or grade, so as to be able to secure pictures when the opportunity came. He was building up for the District what would have been on completion undoubtedly the finest and most complete set of photographs (as well as lantern slides) of native wild flowers and plants in the entire Northwest. Already this collection was becoming recognized by botanists, garden clubs, teachers, and others.

Of late years, Doug had begun to write for publication. Within the past year he had had articles in the Journal of Forestry, Mazama, two in "Better Flowers" (for which he had planned to write a series), one in the last Agricultural Yearbook; had sent in a few months ago an article for the Journal of Agricultural Research; and the last piece of writing he did just before leaving for the Chelan was an article on the utilization of "desert" range by the hauling of water for sheep on the Fort Rock District on the Deschutes, which article he had prepared for the next Yearbook of the Department of Agriculture.

Douglas Ingram was a great admirer of that early Oregon botanist, plant expert, and naturalist, David Douglas. Like the young Scottish botanist of 1825, he was intensely interested in our native flora, was an indefatigable worker and collector; like him he too was of Scottish birth, with many of the same splendid traits, and like David Douglas, his end was untimely, violent, and unutterably tragic.

Doug Ingram will be missed in a thousand ways by us all, officially and personally, for he was not only a fine man and a splendid co-worker, but our friend. His place can not be filled, - either in the organization, or in our lives.

RECREATION VERSUS TIMBER PRODUCTION ON THE STATE FORESTS

By Prof. W. H. Horning, Pa. State Forest School

(Continued from Sept. 23 issue)

In order to have a basis from which to calculate the value of recreation let us assume that it is affected by the law of supply and demand, like any commodity. Then it will be fair to assume that recreation is worth at least as much as the public pays for it. Using this as a measure of value let us take the case of a particular forest where recreation is an important use, and calculate the value of the land to the public for this purpose.

The case taken is that of the Michaux Forest. On this forest conditions are such that it has been possible to collect fairly good data as to the extent of recreational use. During the year 1927 the public enjoyed more than one hundred thousand days of recreation on this forest. A conservative estimate of the cost is $1 per recreation day, or a total of one hundred thousand dollars per year. This sum capitalized at five per cent gives a gross value of $2,000,000 to this 40,000 acre forest, or $50 per acre. This is its value to the public for recreation alone. This figure assumes that the entire acreage is uniform in recreation value. As a matter of fact fully ninety per cent of the recreation was confined to ten per cent of the area. The public is therefore spending ninety thousand dollars for recreation enjoyed on only 4,000 acres. This sum, capitalized in the same manner as above, shows a gross valuation of $1,800,000, or $450 per acre for this four thousand acres, where recreational use is concentrated. This seems to be a very high valuation for land which only a generation ago cost the State less than three dollars per acre. That it is not too high is indicated by prices now being paid for summer-home building lots with the same location. Prices as high as five dollars per front foot are being paid for land facing the same highway that passes through some of this State forest. On an acreage basis this is a price of more than $1,000 per acre for the private land.

Let us now calculate the value of the same area for timber production, and compare the two values. This area includes land much of which is above the average in timber growing capacity, but the most optimistic estimates would not place its capacity higher than one cord per acre per year, with the present growing stock. The stumpage value of this material would not exceed $2. Capitalizing this at five per cent would give the land a gross value of $40 per acre for the purpose of timber production. In this particular instance the land has a value for recreation which is more than eleven times its value for timber production. This four thousand acres should without a doubt be classified as recreation land and managed primarily for that purpose. Probably the same should hold true wherever land shows a value for recreation, which is much more than twice its timber growing value.

There may be some question as to the fairness of comparing stumpage value of timber, rather than the value of products manufactured from it, with the somewhat indefinite value which recreation has for the public. The writer believes, however, that for the conditions existing on the State forests, this comparison is entirely fair, because the public is getting recreation on what might be termed a stumpage basis. If we were to follow the practice of the National Park Service with respect to charging for recreation, the case might be different. When people go into the National Parks they pay an admission fee. While in the park areas they pay numerous fees for the use of costly equipment and services provided for their convenience and enjoyment. Under such conditions there may be a doubt as to whether the public is getting recreation on a strictly stumpage basis.

When State forest lands attain such values for recreation, as shown above, the sort of management which they receive should be somewhat different from that accorded to lands whose chief value will be for timber growing. For example there are many areas whose beauty and value for recreation could be greatly enhanced by improvement cutting. In most cases such cutting would entail greater expense than would be returned from salable materials. Yet from the standpoint of recreational value such expenditures can be readily justified. As the timber on such areas becomes mature, light selection cuttings could be carried out in such a manner as to avoid impairing the natural beauty of the forest. This need not necessarily mean a serious reduction in the total volume of wood production. It does mean, however, that scenic effects and recreational values take precedence and the desire for profit from wood production becomes secondary.

In conclusion the writer wishes to urge the adoption of a plan looking to the setting aside of certain areas on each forest where recreation can be concentrated. The following purposes are to be served by such a plan. First, the avoidance of unnecessary conflict between recreation and timber production. Second, greater administrative efficiency in handling recreation. Third, maximum satisfaction to the people of the State who, as owners of the forests, are interested both in recreation and an abundant timber supply.

FIRE

Expenditures during the ten-day period September 1 to September 10 were as follows:

District 1 - $400,000; District 4 - $7,100; District 5 - $16,000; District 6 - $157,000. In the other Districts the expenditures were small. Total expenditures from July 1 to September 10 are in the neighborhood of $2,100,000.

District 1 reports that no rain has fallen since the first of the month and that the situation is still critical. Twenty-seven hundred men were employed at the end of the period, of which 300 were emergency guards.

No report has been received from District 6. Newspaper accounts indicate, however, that many large fires are burning in western Oregon.

District 5 reports no large fires burning at end of period. Weather Bureau had promised acute fire weather during the last half of the current ten-day period, but evidently the District got through all right.

Emergency guard expenditures for the period July 1 to September 10 amount to $84,500, mostly in D-1. The total estimated emergency guard expenditures from September 11 to December 31 are $130,600. These amounts greatly exceed the average expenditure for emergency guards during the five year period immediately preceding 1928. Since emergency guards must be financed from General Expense funds now, the Districts will be hard up for funds during the balance of the year unless a defincienсy appropriation for this purpose is secured. It is planned to submit such an estimate to the Budget Bureau. It is also proposed to request a change in the language of the Fire item which will permit paying emergency guards from this fund in the fiscal year 1931.

NATURE'S BALANCE

By Charles Allen, Wichita

It's just like old Eck Higgins said as he twisted wisdom kinks into his wrinkled face and worked his thin lips over toothless gums: "Somethin's jest naturally gettin' et up all the time."

Eck explained then that: "Nature knows her onions too. Ef the coyotes didn't eat the prairie dogs, and if the trappers didn't git the coyotes, and the hawks didn't git the rabbits and the buzzards didn't take what's left, there might git to be too much of it all."

Anyway, a young jack rabbit was in trouble one day last spring. Of course jack rabbits are more numerous than hawks, and according to Eck's formula, some old hawk just had to happen along to help Nature keep her balance. And he did. Coming out of the sky on wings of death. Cruel, swift, relentless, he rode the morning air in search of breakfast. Life for the hawk meant death for the rabbit. Nevertheless, life was sweet to Mr. Rabbit. His contentment was exhibited in lively hops and energetic nibbling of newly sprouted grass.

That cruel hawk circled high over the innocent rabbit, then took a dive down. It was a close call for Mr. Longears. He managed to delay Mr. Hawk's breakfast by the margin of a bare inch, and struck off across the prairie, with a firm determination to lengthen the safety zone. But the hawk was hungry and the rabbit was "jest naturally a goin' to be et up," as old Eck would have told us. In truth, it was all cut and dried in Nature's deck. However, it didn't keep the rabbit from running. The hawk had it all over him for speed though, and, from high in the air, took another crack at young Jack. This time breakfast was served, right there in the middle of Scenic Highway.

It was a big hawk and a young rabbit, as has been intimated before, but no big hawk has the capacity nor desire to entirely clean up on a half grown jack rabbit. In other words, there's just naturally going to be something left. The King eats and the servants clean up.

Huge, dark creatures, shadows of death itself, soaring the blue vault on greedy wings. With an uncanny, unerring instinct, they pick out the time and place where life parts from flesh and blood. The hawk had hardly settled to his feast when, a dark, soaring speck appeared over a distant mountain. Then another and another. On wide, spreading wings, the three buzzards came in and dropped softly to ground, near the feasting hawk.

Big, ugly, awkward birds, with head and neck fashioned somewhat after the turkey, far outclassing the hawk in size, but inferior from an aggressive standpoint. Stupidly they looked on. No need to hurry. They'd get theirs. They were sure of what was left, as they always are, but still - servants become impatient while the King eats. They approached Mr. Hawk and made a few timid awkward passes, but the hawk raised his wings and drove them back. The buzzards now, merely stood looking on until he'd finished, then went in and cleaned up.

THE EVENT OF THE HOUR IN CONSERVATION

Farm Board Plans Land Study

Announcement has been made by the new Federal Farm Board that, just as soon as some pressing tasks have been disposed of, it intends to make a careful study of the whole problem of land utilization, condemnation, and reforestation. This field of study is regarded by the Board, it says, as holding an important key to the solution of agriculture's difficulties.

One important phase of the study will be reforestation. Turning the less desirable land into new forests has been advocated by many students of the farm problem. Congress has therefore specifically charged the Farm Board with the job of inquiring into the subject.

Reclamation and irrigation projects are also likely to be affected vitally by the Board's study, according to the announcement.

Almost any program the Board might adopt, if it reaches any decision at all, will require many years to put into effect, the announcement says, but the fact that the land utilization study has an important place on the Board's program is encouraging.

YE EDITOR DISCOVERS

On September 3 the Governor of Wisconsin signed an amendment to the Act authorizing the Federal Government to purchase land within the State of Wisconsin for National Forest purposes, increasing the maximum acreage that may be acquired from 500,000 to 1,000,000 acres. The passage of this Act by a large majority indicates a very great change in the previous sentiment of the State toward Federal work and will enable the shaping up of the acquisition program in the State of Wisconsin without restriction on the part of the State. Other than the raising of the acreage limit, no amendments were made to the original act.

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A novel and simple "Field Book of Destructive Forest Insects" has just been issued by the Forest Service of Maine. Illustrations of the principal types of forest insects, including the egg mass, pupa, caterpillar, and adult form are contained on one page, and subsequent pages contain illustrations and simple descriptions of the principal species occuring in Maine. H. B. Pierson, Forest Entomologist of the Maine Forest Service, writes as follows:

"We are gradually organizing the forest fire protective force to report early and intelligently on all insect outbreaks."

Copies of the booklet are being sent to the Districts and to the Forest Experiment Stations.

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Thousands of feet of lumber are being utilized in harnessing the Illinois River near Joliet on a construction project that will furnish the last link in a nine foot navigable channel from the Great Lakes to the Gulf of Mexico.

More than 20 million dollars, it is reported, will be spent on this large control project. When inspected recently by W. H. O'Brien and C. F. Bolden of the Southern Pine Association, it was found that more than 350,000 feet of lumber, long leaf and short leaf Southern Pine, have already been required for concrete form work. Officials in charge of construction sought the counsel of the Southern Pine Association in regard to the grades and qualities of lumber used.

This huge construction project proves the truth of the saying, "Whatever you build, you must build it of lumber first." Although the locks and the control project when completed will be of concrete and steel, yet it was necessary to build the form work and skeleton of the entire project of lumber first.

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"New Woods for Old," a motion picture taken in Maryland was recently released for showing. It is a Forest Service - Extension Service picture covering farm forestry in the hardwood type.

Within the next week two more films are expected to be ready for release. One of these is entitled "Selective Logging in the Lake States," and covers commercial forestry practice in hardwoods. It is based on the Zon and Garver study and shows that it doesn't pay to cut small trees. The other is a sheep grazing picture taken in Utah and is entitled "On A Thousand Hills." This film stresses management of the plants rather than management of the stock.

MICHIGAN FOREST FIRE EXPERIMENT STATION

Mention was made in the September 2 issue of the Service Bulletin of a forest fire experiment station recently established by the Michigan Department of Conservation. More detailed information about this station is contained in an article by Zon in the District 9 Bulletin for September, from which we are quoting as follows:

"The Michigan Department of Conservation, in cooperation with the Lake States Forest Experiment Station and the District Forester at Milwaukee, is establishing a unique experiment station devoted almost exclusively to forest fire problems. The station has been located within a few miles of Roscommon. It is in the sandy jack pine belt and consists of several sections.

"The main idea behind the station is to determine climatic factors such as temperature of the air, humidity of the air, wind velocity, inflammability of the duff, upon the ease with which fires may be started, their spread, and damage. These fires, which will be deliberately set by the men in charge of the experiment under the supervision of the chief fire warden, will also be used for testing out equipment - pumps, tools, chemicals, backfiring, and similar methods of fire fighting under varying conditions. It will serve, therefore, not only for the purpose of testing out and experimenting with different methods of fire fighting, but also as a training school for the State fire rangers in combating fires.

"The area is to be surrounded by a 300-foot fire line and broken into lots of 20 to 40 acres. The fires will be set during the spring, summer, and fall, in the morning, noon, evening, and under different and varying conditions of wind velocity, air humidity, temperature, etc. The areas to be burned will also be examined first as to the soil and growth, and re-examined after the fires as to the changes brought about by the different fires. After an area is burned over once and possibly twice, it will be studied with respect to its reforestation by natural and artificial means. The fire damage to the second growth will also form a part of the study.

"This station should provide more accurate basis than we have had hitherto as to the behavior of forest fires under varying conditions, and the best method of fighting different fires. It is practically placing forest fires under laboratory methods of investigation, except that our laboratory will be right in the woods and consist of several thousand acres in extent."

HOW TO GET TO A FIR

From a letter by John D. Jones: "Landed here (Kalispell, Montana) at 7:05 P. M. by plane from Missoula. Had a wonderful trip. The Canyon was at its best, then crossed over the Kaibab Forest and straight to Salt Lake - arrived at 12:00 noon- made over one hundred miles per hour. None of the men got plane-sick to Salt Lake but several did between there and Butte as it was bumpy and we were flying low. We had expected the whole trip to be like the first half and all of us partook of a big lunch at Salt Lake, which we later regretted. As soon as we reached Dillon it was smooth riding again, and continued so for the rest of the trip. Got an awfully big kick out of seeing all the country from Butte to Missoula I know so well- we were flying very high then, over 2,000 feet above the mountains. We could see the Hellgate River and the big Blackfoot at the same time. Circled over Missoula and circled the valley three times to drop to the landing field. Dropping gives no different feeling than straight flying- I thought it would. The planes have very comfortable seats- can walk around just like a train- the roar of the engines makes it hard to talk-also have sliding windows for air. While in the air unless you look at the ground you have the impression of standing still and you sometimes wonder why the pilot doesn't give her the gas. Our whole trip covered about 1100 miles" - D.3 Bulletin, Sept. 6.

CIGARETTES THAT EXTINGUISH THEMSELVES

Cigarettes that continue to burn after they have been discarded are the cause of countless fires. Hotel-keepers in French towns put up notices begging Messieurs les voyageurs not to throw their cigarettes out of the windows because of the danger of setting fire to the highly inflammable awning of the brasserie. Forest rangers from Long Island to California warn tourists and campers not to throw away lighted cigarettes where they may cause forest fires.

Yet there is an annual fire loss in this country alone of approximately $90,000,000, due to the carelessness of smokers. Since efforts to reform the human element seem almost hopeless, advocates of safety measures have turned to the other culprit - the cigarette. ?he Bureau of Standards has been experimenting for six months to find a cigarette that will put itself out.

Now a "safety cigarette" has been evolved with an inch tip of cork, "lined with water-glass air-excluding silicate." With its inch of fireproofing, the self-extinguishing cigarette was found to go out so speedily as to reduce the fire hazard about 90 per cent. If smokers would do their share by being 10 per cent more careful, the adoption of the new cork tip should make the world 100 per cent safe from cigarette fires. - The New York Times, August 17.

EXTRACTED FROM A LETTER

"Last Saturday night, in company with my brother-in-law, I left Portland quite late on a fishing trip along the head-waters of the Clackamas River. It was a few minutes past midnight when we reached Clackamas Meadows, where we planned to leave our car and hit the trail down stream. We knew we had to have a fire permit, and there was no light in the ranger station. We at last decided to try to rouse the ranger and see if he would get up to give us a permit, in spite of the late hour.

"We did not get his name, but I hope you will have an idea who he is, for he certainly was most gracious in his response to our request, even though we had pulled him out of a comfortable bed in the middle of the night, just to accomodate us, so that we might be where we wanted to fish early in the morning. He not only responded to our request, but further manifested his courteous attitude by expressing the wish that we would have a pleasant and successful trip down along the stream, which we did.

"It certainly is a pleasure to meet with such men in positions like this, and I wish to commend him to you, and express our hearty appreciation of his courtesy." - District 6.

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The diaries of George Washington have recently been published in book form. How conscientious an observer and recorder of data he was may be noted from his diary of March 9, 1785.

"A great deal of rain fell last night and the heaviest sleet I ever recollect to have seen.

"The bows (boughs) of all the trees were incrusted by tubes of ice, quite round, at least half an inch thick, the weight of which was so great that my late transplantations in many instances sunk under it either by bending the bodies of the young trees, breaking the limbs or weighing up the roots. The largest pines in my outer circle were quite oppressed by the ice; and bowed to the ground, whilst others were loosened at the roots, and the largest catalpa trees had some of their principal branches broken." E.N.M.

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With the development of scientific forestry the original ideal of conservation - to save what remains - has been modified to include "cropping" and provisions for reforestation. The rule of a tree for a tree is too rigid for American Conditions. But until the big lumber companies are forced so to operate that natural reproduction may take place there is little prospect of assuring forests for the future. On State and National Forests such control is already feasible. If the Michigan plan is followed, lands which have reverted to the State may be planted and ultimately become part of the forest reserves. But not even the growing public opinion in favor of genuine conservation is strong enough to control the actions of selfish interests who regard their lawful ownership of timber as a matter which concerns themselves alone. - The New York Times, August 24.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture

February 1, 1905

Service Bulletin

Contents Confidential

Vol. XIII No. 40 Washington, D. C. October 7, 1929

WE SALUTE A NEW HERO

By Emma H. Morton, D. 6

A story has just been broadcast through the columns of the Bend (Ore.) Bulletin, of youth, courage, and devotion to duty that makes one want to stand up and cheer. It is of Howard La Duke, scarcely more than a boy, who last spring first attended the fire fighters' training school conducted on the Deschutes Forest.

The fire season was at its height when a lookout discovered a wisp of smoke on the horizon, later designated as a "lost" fire. La Duke was given three days' food supplies and dispatched on his motorcycle with instructions to find the fire and stay with it until it was trenched. Four days passed; no word came from La Duke and nothing more was seen of the smoke. The fire dispatcher, fearing an accident, sent a man to investigate. Finally on the fifth day the motorcycle was found but there were no traces of the boy except footprints leading further into the forest. Suddenly, the officer came upon a sight that caused considerable amazement. Here before him was a fire covering some two acres, but well under control, though still being tended by a half-starved, well-nigh exhausted but triumphant youth, who, single-handed and with food sufficient for little more than half that time had struggled with the flames day and night for five days. He explained that he had been unable to leave for help because the wind continually carried sparks which started new fires.

"That is the record that young La Duke made, out there in the deep woods, where there was none to praise, none to comfort, none to assist. Great is youth, wonderful is life, and splendid are the spirits that battle to serve and guard humanity. ** There are also heroes other than those where the war drums beat and dead men sleep", says the Portland Journal in an editorial comment.

OPPORTUNITY FOR TECHNICAL WORK IN THE LAKE STATES

By E. W. Tinker, D. 9

It is a frequent assertion by technical foresters, new and old, in the employ of the Forest Service, that they can find no place to use their technical knowledge. The National Forest Units in the Lake States offer now, and will to a much greater extent in the future, an opportunity for the application of technical knowledge and the development of new technique in forest practice.

Ten units have been established in this region, within nine of which the land for National Forest purposes is being sought. Within nine of the areas there will, by the close of the present fiscal year, be in Government ownership sufficient land to justify administration and the initiation of forest culture.

By and large, the new units, although containing excellent soils, are in a badly devastated condition. The Forest Service in taking over the work within defined areas is assuming a definite obligation that the lands purchased will be restored to their fullest productivity. It is not the plan or intention to take over vast areas of land, thereby creating a situation similar to that which exists in the West, but rather to make the Units serve as demonstrational areas of good forest practice and technique in order that other public agencies and private individuals may be encouraged to practice forestry. The whole plan is contingent upon the bringing to its highest productivity every acre within each of the units. Public opinion in the Lake States will be satisfied with nothing less and by recommending and undertaking the program the Forest Service is practically committed to obtain these results.

With the existence of markets for wood products in all their various forms, reconditioning of areas that have been stripped of their more valuable species will be practical. With an area of 1,200,000 acres that must be artificially reforested and with public sentiment strongly in back of a vastly extended reforestation program, enlarged planting activity seems inevitable. District 9 is faced with a reconstruction job that will require the best of technical forestry talent.

It is frequently suprising how viewpoints change in different environments. Rangers and technical assistants in the new purchase areas in the Lake States talk in terms of forties rather than townships. The condition of the stand on this 10-acre tract or that 40 becomes a matter of primary consideration. The Lake States Forest Experiment Station is developing silvicultural data that will be applicable to this 20 acres of spruce swamp or that 40 of white pine poles. All convincing evidence that the existence of opportunity for use of technical knowledge brings forth the latent knowledge dormant in the minds of foresters practically or technically trained.

In the Lake States District, it seems a certainty that there will be a field for technical foresters who are serious in their desire to practice their profession in all its ramifications and to apply their technical knowledge to the limit in the rehabilitation of areas that must be, if they are to carry out their purpose, cultivated to the last degree.

WATER POWER DISCOVERY BY AIRPLANE IN ALASKA

B. F. Heintzleman, D. 8

Our scanty knowledge of the vast and rugged area included in the Tongass National Forest, Alaska, and the value of the airplane for acquainting us with its true conditions and resources are strikingly shown by a discovery made within the present month by the Alaska Aerial Survey Detachment, Bureau of Aeronautics of the Navy Department. This party, with the cooperation of the Forest Service and other Government Bureaus working in Southeastern Alaska is making an aerial photographic survey of this region as the basis for a topographic and timber cover map.

For many years the Forest Service and large local mining companies, and for the past three years the pulp and paper interests have been studying the known water power resources and exploring for additional powers in the vicinity of the town of Juneau. In spite of these explorations the Naval mappers have just discovered a water power site within twenty miles of the town which for capacity and cheapness of development is in the front rank among the local powers. It was found from the air by Lieut. Commander Radford, head of the Detachment, who photographed it from many angles and shortly thereafter revisited it with a member of District 8 and a Geological Survey topographer aboard the plane.

The power site consists of a lake lying three miles from the shores of tidewater at an elevation of 2300 feet. It is almost entirely surrounded by snow-capped peaks from 4000 to 5500 feet in elevation, and has a small glacier discharging into its head. From our knowledge of the runoff from the watersheds of other nearby powers we have estimated its yearlong capacity at not less than 24,000 horse power. Preliminary soundings in the lake showed a depth of 250 feet at points only 200 feet from shore. This great depth makes the lake admirably adapted to a method of cheap development by which a conduit in the form of a tunnel will tap the side of the lake far beneath the present water surface, and the lake bed below the elevation of the natural outlet will thus provide the required storage space. This obviates the necessity for an expensive dam to impound water for the periods of low streamflow.

The lake is highly valuable to the pulp and paper interests who intend to establish a large newsprint mill in Juneau. The plan was to bring power for this mill from the Speel River power sites, 30 miles further from town. The field engineering work at Speel River covering two years has just about been completed and application for a water power license was to be made this winter. The company saw the advantages of the new power site at once and has already shifted its engineering party there, transporting its men and equipment to the lake by airplane.

A direct saving in power investment costs of not less than $650,000 will result from developing this site rather than the Speel River power. In addition the shorter transmission distance will mean a saving of electric energy due to a smaller line loss, while the hazards to the shorter line which might cause interruptions to the service will also be greatly reduced.

The Navy Department started the aerial photographic surveys in Southeastern Alaska in 1926, covering 10,000 square miles that season. The work was again taken up this year and is still in progress. Approximately 12,000 square miles will have been photographed this summer when the party leaves on September 15 for its base in San Diego, California.

It is interesting to note that the 1926 detachment also discovered a large water power of great importance to the Forest Service. This was near the town of Ketchikan and it was immediately applied for by the concern that is to establish at that point the other large paper making project which is planned for the Tongass National Forest. Other powers were also found by both parties but the two mentioned above were very timely and outstanding discoveries. In conjunction with the timber cover data obtained by the aerial mappers they have advanced the establishment of our huge newsprint manufacturing projects very materially.

It can safely be said that the finding of the new lake near Juneau outweighs in value the total cost of both the 1926 and 1929 aerial surveys, which is estimated to be between $250,000 and $300,000. Ninety per cent of this cost represents contributed time on the part of the Navy and is thus not an extra charge to the Government.

The aerial survey party is composed of 100 men. It includes 5 air pilots, 30 mechanics, photographers and laboratory workers, and 65 men comprising the personnel of the Navy vessel which acts as tender for the detachment. Four amphibian planes are used in the photographic work.

FIELD TRIPS DE LUXE

By L. F. Kneipp, Washington

In the ancient days of the Forest Service the visiting Forest officer bent upon explorations in the field began his trip by extracting from the baggage room of the depot his saddle, pack outfit, etc. The next step was to arrange with the temperamental proprietor of a livery stable for the temporary employment of two or more members of the equine family, usually of doubtful disposition and durability. Following this there was a session with the proprietor of one of the local grocery stores, resulting in the acquisition of a supply of foodstuffs selected largely on the basis of utility and convenience of transportation, after which efforts were made to conscript the local Forest officer for so much time as was necessary for the trip.

As compared to those days, field trips are now matters of ease and luxury. Nobody from the District Forester down cares to allow an inspecting officer to roam at large and express unexpurgated views regarding matters of local administration. As a result said inspecting officer usually is accompanied by one to several members of the local organization. One of these is sure to have a reasonably luxurious and efficient motor car, which transports the inspecting party over comfortable roads and makes it practicable daily to reach places of accomodation and refreshment which meet the standards of the most exacting.

But after one has accompanied a committee appointed by authority of Congress to investigate and report upon proper adjustments of boundaries between a National Park and a National Forest, he is forced to the conclusion that in the matter of luxurious travel the man whose experience has been confined exclusively to National Forests "don't know nothing and ain't seen nothing." For example, take the recent investigation of a special committee of the boundaries of the Yellowstone National Park.

The committee assembled at the delightful Burlington Inn at Cody, Wyoming, where each member revelled in the joys of a separate room and bath and other luxurious appointments. The members of the committee were permitted to pay for their meals, but upon departure were advised that otherwise they were the guests of the Inn, which was delighted to extend its hospitalities to a group engaged in such meritorious work. The committee traveled in one of the crack busses of the Yellowstone transportation company, which equally was pleased to extend its facilities and courtesies in recognition of the public service of the committee. At each hotel visited each member of the committee upon arrival was presented with a little blue or white or green ticket good for one of the best rooms in the house and unlimited gastronomic privileges in the hotel dining room. Finally, when it left these delights of civilization and embarked on the actual trip of exploration and field study it had available one of the best strings of saddle and pack horses in Wyoming, with such luxuries as folding chairs and tables, cook and dining tents, tepees, and other conveniences of which the old-time field officer of the Forest Service never so much as dreamed. Members of the committee packed their own duffel bags and rolled their own beds and, while it was not obligatory, they also took down and folded up their tepees. The riding horses were delivered neatly saddled and carefully bridled to each member each day, and meals of several courses involved no painful duties of preparation or of dish-washing.

Old timers in the Service possibly may contend, perhaps with some justice, that effete and decadent days have come upon us, but some degree of consolation may be derived from the thought that, relatively, life in the Forest Service is still hard and exacting and demanding of the qualities of hardihood and of endurance and individual ability to meet the challenges and adversities of nature; and that there are degrees of luxurious comfort in field travel far beyond the wildest expectations of even present day field officers.

WILL THE TAIL EVENTUALLY WAG THE DOG

By Allen H. Hodgson, D. 6.

In connection with a general study of sawmills and paper pulp plants in Western Washington, made preliminary to preparing a working plan for a survey of sawmill waste in the Douglas fir region, it is found that more or less waste wood is being utilized in one form or another by practically all sawmills and that this use, which has rapidly developed in the last two or three years, is having a marked effect on the lumber industry. Less and less wood is being sent to the refuse burners and in a few cases this practice has been practically or entirely done away with. The principal uses for the waste material are hogged fuel, paper pulp chips, body wood for fuel and pulp, lath, handle squares, shingle bands, etc.

The demand for hogged fuel and pulp chips has increased to such a degree that practically every sawmill on Puget Sound, in the United States and British Columbia, on Grays Harbor and on the Columbia River is tied up with contracts for these commodities. Practically all of the sawmill waste from pulp species is now used in these regions and the pulp and paper industry which has invested millions of dollars in mills and equipment is combing the region in an effort to find more sawmill waste. This industry is depending to such a degree upon mill waste that certain pulp companies are becoming seriously concerned over the curtailment program of a five-day week recently adopted by the West Coast Lumbermen's Association as a possible remedy for the lumber price depression. Pulp mills who have planned their operations to depend upon a six-day production of waste from sawmills are greatly perplexed over this issue, as with their great investments and operating policy they can not afford to shut down part time in keeping with the sawmills. In discussing this matter a manager of one of the largest pulp and paper mills in the State recently said: "The sawmills of this region, through the sale of waste wood to pulp mills are receiving a very large sum of money which to their operations is velvet. Some pulp mills, because of assurances of a steady flow of this material, have arranged their operations to depend upon it." "Now", he continued, "you can appreciate the situation when this supply is cut off. We can not afford to depend upon an uncertain supply of raw material. If the sawmills continue this curtailment program to the point where we are short of pulp chips for our digesters and hogged fuel for our boilers it means that we will have to discontinue the use of sawmill waste and build up machinery for taking raw material directly from the woods or log market and depend on other fuel for our power and heat. If this is done the sawmills will lose a large source of revenue". This man also made the following statement which is pertinent to lumber trade extension and wood utilization: "I don't understand", he said, "why the lumbermen are aggressively discouraging the use of paper and fiber containers when a large part of the material used to make these containers is derived from sawmill waste which is sold to the pulp mills by lumbermen themselves".

The economic bearing which the pulp industry and the hogged fuel business are having on the lumber industry can hardly be appreciated by one who is not following the matter closely. It is enabling lumbermen to dispose of waste and low-grade lumber at a profit which formerly could not be sold at any price and actually cost the operators thousands of dollars to destroy.

Some sawmills are now selling all of their No. 3 and No. 4 Common hemlock lumber to paper pulp companies as well as all suitable waste material for use as pulp chips.

Another example of how the demand for by-product materials is affecting the lumber industry was found at one of the largest lumber manufacturing plants on the coast. This company with its huge output of lumber has stopped sending material to the refuse burners altogether. Not only all of the waste wood is used but every bit of the sawdust and bark as well. Even the rotten wood in defective logs is utilized. This company, in fact, has not been able to meet its contracts for by-product material and this has reflected upon its logging policy. At present this operation is bringing in from its logging camps all logs that will produce ten per cent No. 2 Common or better lumber. This is a startling development when it is remembered that only a short while ago logs that contained less than one-third No. 1 Common lumber were culled and left in the woods.

This all goes to show that the tail (utilization of waste wood) is already beginning to wag the dag (Douglas fir lumber industry). What the tail will do when it really gets started no one can predict.

YE EDITOR DISCOVERS

In telling of his recent trip with the Agricultural Subcommittee of the House Committee on Appropriations, Major Stuart said that the trip was a satisfying one in that the committee was able to see representative phases of our work in the districts passed through, discuss Forest Service problems with many individuals and groups, and gain more direct knowledge of our work and problems. Considering the fact that the committee saw the work at the Forest Products Laboratory, some of the work at several Forest Experiment Stations including the Great Basin Station, and National Forest work in the Lake States, in Districts 1, 6, 5, 4, and 8, its members have a fair cross section of our objectives, how we are trying to attain them, and of our limitations. Major Stuart said it was very gratifying to him that the committee was willing on all occasions to go right into the woods and see the particular projects scheduled, patiently and intently listening to and participating in discussions. Fortunately, through excellent advance arrangements by the District Foresters, the committee was able not only to utilize its time to the best advantage on Forest Service activities but to meet the representatives of other bureaus of the Department operating in those sections and discuss their problems. The trip was therefore by no means a strictly Forest Service-National Forest inquiry.

It will prove very helpful to have had this contact between the members of this committee and the western people who are so interested in the work of the Forest Service and the Department of Agriculture generally. In San Francisco, for example, one whole morning was devoted to hearings, at which all who wished to make a statement to the committee on any line of work which it is concerned could do so. It is obvious that such an environment was conducive to a fuller and freer presentation of projects than is possible in Washington.

The members of the committee stated publicly that they were impressed with the scope and size of our problems and of their national import. The committee was constantly conscious of our forest protection problems, as everywhere it went it read or saw evidence of forest fires.

It was noted that a number of the local Congressmen who joined the party had a limited knowledge of our work and objectives. Major Stuart cited this as a challenge to any thought that either the Forest Service or forestry is well known and understood by the public. On the contrary, it stresses the urgent need for more contacts and more extended effort to obtain a well informed public opinion on these questions.

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G. P. in writing to Major Stuart from the Galapagos Islands, July 10, says; "This is the most strange and unusual place I was ever in. One strikingly remarkable thing about it is that all the wild creatures regarded us as their friends and playmates, and came to us and hung around us with the greatest confidence and curiosity. Most of them had never seen men before, and so were entirely unafraid. The birds perched on our heads and our knees and ate out of our hands, and were so tame that I would hardly dare to tell the truth about them if I did not have photographs, as I have in plenty, to prove it. " *****

"The Galapagos are not entirely without people. One island as big as a Pennsylvania County has three men on it. Another almost as large has seven. Another one, a hundred miles long, has about 150, while the most populous island of the group has between four and five hundred. It was at this island that we bought the most delicious oranges for forty cents a hundred and whole twelve bunches of bananas for $1.50 for the lot."

In the next issue of the Bulletin we will give extracts from an interesting article by Mrs. Pinchot on these islands.

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Dr. E. C. Sherrard, acting in charge of the section of Derived Products at the Forest Products Laboratory, was elected to the chairmanship of the Cellulose Division of the American Chemical Society at the recent meeting of the society in Minneapolis. Dr. Sherrard, who was vice-chairman of the Cellulose Division during the previous year, succeeds J. L. Parsons of the research staff of the Hammermill Paper Company as chairman.

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Mr. Kneipp's article in this issue on "Field Trips De Luxe" will make many old timers blush for him. Inns with baths, Crack busses, folding chairs and dining tents, and most shameless of all - riding horses delivered neatly saddled and bridled each day. Of all things!

FIRE!

Total expenditures to September 20 are $2,657,000.

The large expenditures during the 10-day period ending September 20 are as follows: D-1 - 250,000, D-5 - 43,000, D-6 - 200,000.

Total area burned in the Western Districts for the calendar year is 842,389 acres.

D-1 reports 2,600 men employed on September 20, of which 400 were emergency guards. District states that situation is much improved owing to snows at higher elevations, and showers. Have had no general rains up to September 23, however. The weather maps for Tuesday and Wednesday indicate that general rains finally occurred.

D-5 reports that a very smoky condition in Northern California has made detection extremely difficult. Fire conditions, which were critical during most of the period, were somewhat improved by light rains which occurred on September 18. Situation on Southern California Forests was normal for this season of year.

D-6 reported a logging fire on the Mt. Hood which covered 20,000 acres, and threatened the Town of Estacada. Also reported on a large fire on the Columbia which in two days burned over 30,000 acres, destroying 4,000 acres of a plantation. A fire on the Olympic burned over 7,500 acres, and one on the Umpqua covered 5,000 acres. Fire conditions were much improved at the time the report was sent, September 21. The weather map for Monday, September 23, shows light rains in Western Oregon and Washington.

TWENTY FIVE YEARS AGO

Mrs. Jennie B. Burnham, "Jennie B", as she is known to her office associates in District 7, completed 25 years of loyal service on September 19, and it was made the occasion for quite a celebration by members of the District office. When she arrived at her desk on that morning she was greeted by a cake holding 25 lighted candles, a large vase of flowers, and $25 in gold. It was felt that apart from the esteem in which she is held, this was a very "special occasion" as she is one of two or three in District 7 who have served so long.

Mrs. Burnham entered the Service on September 19, 1904. She was in the Office of Computing and then in the Branch of Grazing until the reorganization in 1908, when she was transferred to the District 4 office at Ogden, Utah, In 1910 she returned to the Washington office and was assigned to Accounts. In May 1922 she was transferred to District 7 Accounts, in which office she is now working.

FROM A LETTER TO THE SECRETARY OF THE INTERIOR

"For a long time the National Parks have been given a great deal of publicity by various writers - I have written several articles, myself. But little - TOO little - has been told the American public about another great enterprise that is so splendidly managed by the Government - the National Forests! The average man-in-the-street knows next to nothing anent that efficient - but silent - little army of men, the Forest Supervisors and their staffs, who faithfully keep watch and ward over vast properties of the people. It seemeth to me that it is high time that the magnificient work of conservation and preservation that is carried on by the Department of which you are the head, be known!

"May I, Sir. express my greatest appreciation for the exceeding courtesy and helpfulness shown to me by Supervisor Carl B. Neal, whose headquarters are at Roseburg, Oregon. Mr. Neal left no stone unturned, consistent with his many duties, to put me in touch with the "workings" of a National Forest. He, his rangers, and all the other members of the force under his command, did everything possible to make my stay a pleasant - and, from the writer's viewpoint a profitable one.

"I might add that I have had a good deal of experience in the Parks. Mr. Albright is an old friend, and Mr. Mather was ever most kind. But in none of the Parks have I seen any greater efficiency, more up-to-the-minute methods, or a better system of operation - than I intimately witnessed in the Umpqua National Forest."

COLVILLE FIRE NEWS

There's no news from the Colville except fire news, and there's too much of that. The following are quoted, however, from newspaper items from that country:

"What price forest fires? George Ferris, resident of the Coquille country, said that he had counted the remains of close to 50 deer. one bear, and a cougar as the result of the forest fire near Kettle Falls. The animals were huddled together when the flames enclosed them, and finally burned to death. The carcasses of the deer were virtually in one pile."

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"Maddened by smoke and believed to have lost her cubs, a brown bear attacked Dewey Pendry of Republic, Wash., engaged in fighting a terrific forest fire near here, and lacerated both feet as he climed a tree to escape.

"That was one of many stories that came out of the woods as flames continued to sweep through vast areas of forests.

"As young Pendry climbed up the tree, the bear caught hold of one foot. The boy kicked his foot loose and renewed his climb to safety, but the animal swiped with his paw and cut the youth's other foot.

"Another fire fighter came to his resuce and drove the bear away with an axe." - D 6

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people... Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson Secretary of Agriculture

February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 41. WASHINGTON, D. C. OCTOBER 14, 1929

THE N.L.M.A. FORESTRY PROGRAM

Commenting on the forestry program recently adopted by the National Lumber Manufacturers Association (which is outlined on page 7 of the September 16 Service Bulletin) Major Stuart has written as follows to Dr. Compton, Executive Secretary of the Association.

"I am very much pleased to learn of the action of the Board of Directors of the National Lumber Manufacturers Association in its recent adoption of a Forestry Program for the Association. While, as is recognized in the statement issued by the Board, the problems presented lend themselves to varying approaches and are bound to call forth divergences of opinion regarding their solution, I believe that the formulation by your Association of this program and its public expression will materially stimulate sound thinking regarding the measures necessary for the protection, utilization, and development of our forest resources. The Association's interest and participation in constructive forest policies have been manifested before, but never so clearly and directly. In thus outlining its views on this important public question, it serves well both the interest of its members and the public."

HIGHLIGHTS OF THE FIRE SEASON OF 1929

By Roy Headley, Washington

We have said "worst season since 1910" or "worst season of record" so often that it makes most of us tired to hear it again but surely 1929 is the superlative season for freakishness and unfamiliar characteristics.

There were astonishing rains in June in California and even summer showers in southern California. The freakishness of distribution of rainfall is further illustrated by the fact that Utah had "more rain than in any season since 1909" although Idaho was bone dry and District 4 lost more area than in any year since 1919. When I got to District 1 in August I still had Utah mud sticking to my clothes.

There was little lightning in July. We have often said that if we could get by the usual July period of dry lightning storms in Districts 1 and 6 we could handle the rest of the season easily. The July record in the Western Districts was so good that I was beginning secretly to hope for a season of extremely low loss--and then came the fire deluge of

August and September. Lightning fires in California average 560 per annum, but District 5 only had 284 such fires to September 30. On the other hand the night of August 28 saw 239 lightning fires started in District 1—an unprecedented thing for that time of year in that region. Moreover a lot of this last crop of fires in District 1 lit a running, many covering more than one hundred acres in a few hours and before the first man dispatched could arrive. The Wolf Creek fire starting from a strike at 8:30 P.M. was reported as covering 20 acres at midnight. The Talley Lake fire starting from a strike between midnight and 1 A.M. had run nearly one and one-half miles and covered more than 300 acres by noon of the same day. Men who are familiar with the behavior of lightning fires in District 1 know what a freakish record this is. The Superior Forest normally has little danger in midsummer and is relatively free from lightning fire trouble but this year there were 23 lightning fires most of which came during an unprecedented drouth and at a time when the organization was overwhelmed by the work and smoke of a huge man caused fire.

Never before have I seen fires spot so badly or burn with such ragged edges. This was due of course to extreme dryness of material and unusual wind conditions. One might say that the spotting seen on occasional fires in 1919 was the regular thing in 1929. Regions where wind velocity is normally low suffered winds that one expects to find only in Arizona and on the north shore of Lake Superior.

While there were moist spots on the map the season was one of abnormal drouth, taking the country as a whole. Hundreds of acres of oaks were killed by drouth in Arkansas. Swamps dried out in Minnesota and burned freely. On a majority of the forests in District 7 fire days occurred during every 10-day period during the summer—normally a period of almost no fire danger in this region.

One of the most unfortunate peculiarities of the 1929 season is the way the District 1 and District 6 climates have attempted for the first time to imitate the California climate. It is no new thing in California for the fire season to come to a sort of a close without a real rain. Fall weather with lower temperatures, shorter days and dew at night has often been about the only close there has been to the California fire season. But in Districts 1 and 6, long experience has led us to expect fire seasons to close abruptly with a rain so heavy that no fire could survive except in roots, ends of logs, etc. This year there were showers and moist weather from time to time but on October 1 the season could not be said to be ended in either District. This adds one more uncertainty for executives to struggle with in handling finance and personnel and the prolongation of the season this year has brought a considerable proportion of the losses and the cost of fire fighting.

While I have no exact record, I think that about twelve fire fighters have lost their lives this year. At least two of these deaths occurred on state fires. For the first time so far as my knowledge goes, we lost a member of the permanent force.

Average expenditure for emergency guards prior to 1929 has been $66,000. Highest was $127,734 in 1924 and lowest was $9,550 in 1923. In 1929, $84,500 (S & E) was spent from July 1 to September 10 and our best estimate is that $130,611 more is required to December 31 because of the unprecedented way in which the season is hanging on. An S & E deficiency appropriation will be requested to cover this situation.

A statistical summary of the year's record to date is as follows:

FIRE STATISTICS CALENDAR YEAR 1929

(To September 30)

Dist.	No. of Fires				Area burned over-Inside	Expenditures F. Y.	Causes		
	A	B	C	Total			Lightning	Man-caused	Total
1	1,263	431	198	1,892	340,000	$1,520,000	1,304	688	1,892
2	137	77	20	234	12,832	4,083	141	93	234
3	603	213	53	869	9,307	8,830	680	189	869
4	330	97	38	465	43,417	73,000	273	192	465
5	563	276	211	1,050	90,100	290,000	284	766	1,050
6	942	311	150	1,403	293,800	900,000	678	725	1,403
7	37	239	314	590	40,340	35,667	54	536	590
8	15	5	1	21	33	966	-	21	21
9	70	19	18	107	28,621	36,133	23	84	107
Totals	3,960	1,668	1,003	6,631	858,450	2,868,729	3,437	3,194	6,631
	60%	25%	15%				55%	45%	

O.&C. expenditures $85,000 additional.

Calendar year	No. of fires	Acres burned inside Bdys	FF Expenditures	Damage
1925	8,263	349,000	$ 857,516	$ 707,895
1926	7,095	956,000	2,167,732	4,260,000
1927	5,693	224,000	646,624	270,000
1928	6,921	498,000	1,179,172	580,000
1929	6,631	858,450	3,037,300	2,000,000 (D1) 1,000,000 (D6)

ATTENTION EX-SERVICE MEN

The following letter has been received by the Forester from the National Rehabilitation Committee of The American Legion:

"I have the honor to invite your attention to Section 310 of the World War Veterans' Act, 1924, as amended May 29, 1928, which permits the U. S. Government to grant, upon application and payment of the initial premium, Government Life Insurance in any multiple of $500 and not less than $1,000, nor more than $10,000, to any veteran of the World War who has heretofore applied for or been eligible to apply for yearly renewable term (war time) insurance or converted insurance, provided that such person is in good health and furnishes evidence satisfactory to the Director to that effect.

"The Government is offering seven plans of insurance to meet the needs of the veteran. The policies participate in dividends and the premiums are based on the net rate and do not include any charge to cover the cost of administration or the total permanent disability provision. Further, the insured under a United States Government life (converted) insurance policy, may designate any person, firm, or corporation, or legal entity, as the beneficiary under his policy, either individually or as trustee.

"I am deeply interested in bringing to the attention of all who are veterans of the World War, the full significance of the above amendment, and it would indeed be a valuable service as well as an extreme courtesy if your Service would lend official recognition to the splendid possibilities and advantages of Government insurance."

Application for Insurance - Form 739 - and copies of Forms 752 and 865, pamphlets prepared by the U. S. Veterans Bureau, explaining the provisions of the amendment with regard to the various plans of insurance offered, the premium rates at different ages, etc., will be furnished by the U. S. Veteran's Bureau, or by any of the Regional Offices of the Bureau, upon request.

MAKING FIRES

Fire worship seems to be instinctive in some children. All children delight in fire and at one time or another desire strongly to set fires and see the flames rise. Even you and I, grown wise with the years, can stand to watch a fire that is costing us nothing, as long as the firemen and police hold their patience.

But, it is no trifling matter for the mother of a child who has the fire-setting notion strongly to the fore. It seems impossible to teach the young fire lover the danger of his quest. He weeps and promises to reform, waggles his head solemnly in token of understanding and sways it from side to side with the gravity of a true mourner in token that never again will he so much as look at a match. And then he does it again.

Usually he is somewhere between three and five years of age. He is a creature of instincts rather than of reason and talking to him, reasoning with him, does not help. Only experience can teach him. We have to learn to say little. Impress him with the feeling that his offense is so great it can be spoken of only in whispers, gestures of distress. And let the weight of the difficulty fall upon his shoulders as far as possible.

After you have put out his little fire, make him "put it out" pouring on water, or sand, in as great a quantity as time and place will permit. If possible let this process inconvenience him. Then let him clean up the mess as far as his abilities permit. That, too, is to be as arduous an undertaking as you can allow under the conditions. All the time you say as little as possible. Your marked silence will speak louder than your words.

Do not tell of his exploit before him, or in fact, behind him if you can help it. The less said the better. The less drama, the less fear, the less excitement he gets out of the occasion the less likely he is to repeat it. The more inconvenience to him personally the better. But do not burn his fingers; do not beat him; do not scream at him. Keep still and let him find his own way out of the trouble as far as possible.

Some children set one fire and never set another. Some will set two or three and the phase is over. Now and again there is a child who keeps on setting fires until he is nine or ten years old. That child needs the attention of the child specialist.

All children love a bonfire. When boys take old pots and put fire in them and signal each other, as warriors of old, never mind. When they gather waste materials for an election fire, direct them as to the place and the time and supervise them. These fires are purposeful; they are in celebration of a rite. They have no relation to the desire of the child to set a fire just for the love of the flame and the smoky smell and the excitement.

It is the setting of the tiny fire in the corner of a room, in the empty room, under the bed, in the corner of the cellar, that the three and four year old enjoys. This is the instinct of old and must be redirected. Don't be frightened. Watch and keep calm. Guard the matches without making parade about it. Direct the child's attention to other things. Give him, if possible, a new and absorbing interest. But don't beat him. - By Angelo Patri in "Safeguarding America Against Fire," September 1929.

YE EDITOR DISCOVERS

Forest Service participation in the National Farm and Home Radio Hour was opened October 1 with a ten minute talk by Major Stuart on "Our Wood Supply in 1950." Through the courtesy of the National Broadcasting Company, the Department of Agriculture is being afforded an enlarged hook-up this year that takes in practically all the important stations on the NBC chain and is within listening range of almost every radio fan in the country. The Departmental programs are to be on the air daily except Saturday and Sunday at 12:30 central standard time and include short talks by Department experts and informational announcements. The Saturday programs are given over to the 4-H Club activities.

During the coming season a number of Forest Service men will appear on this series and forestry will be represented in the "Farm Calendar" announcements which are a part of the program.

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The amounts available to the States during the fiscal year 1930 from the 10 per cent and 25 per cent funds are as follows:

State	10% Fund	25% Fund
Alabama	$ 76	$ 189
Alaska	8,252	20,629
Arizona	37,059	92,649
Arkansas	7,563	18,908
California	142,646	356,606
Colorado	49,886	124,715
Florida	3,156	7,890
Georgia	1,341	3,352
Idaho	62,771	156,928
Maine	566	1,416
Michigan	674	1,685
Minnesota	2,850	7,125
Montana	26,388	65,969
Nebraska	958	2,396
Nevada	9,252	23,131
New Hampshire	7,813	19,532
New Mexico	13,951	34,877
North Carolina	3.062	7,655
Oklahoma	457	1,142
Oregon	106,007	265,026
Pennsylvania	405	1,012
Porto Rico	25	63
South Carolina	507	1,267
South Dakota	17,195	42,988
Tennessee	1,192	2,981
Utah	20,515	51,287
Virginia	3,695	9,238
Washington	67,112	167,779
West Virginia	698	1,745
Wyoming	29,784	74,460
Total	625,856	1,564,640

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District 5 has embarked on a protection road project which should interest the other Districts. We would call it mass production. It seems the boys are trying to get, for a given quantity of money available, the largest mileage of usable roads and the greatest quantity of accessibility.

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Hamel and Tinker of District 9 made good use of airplanes at the Brule Lake Fire this summer in transportation of men and equipment, and in scouting. Due to the pall of smoke which covered everything, eight new fires were first discovered by the planes. District 9 has no allotment from our air appropriation but was able to use FF funds because it was a going fire. They hired commercial planes from various points which were able to take off in three-quarters of a mile of water. Larger planes carrying more men and equipment would have been better, but when these are used larger bodies of water must be available. This is the Land of Ten Thousand Lakes and they should be able to find any sized body of water they desire, but, it may not necessarily be in the right place.

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An airplane has been secured by the Alabama State Commission of Forestry for use in the fire protection work carried on in cooperation with the Federal Government, according to a statement issued by the Commission. It will be flown by Page S. Bunker, the State Forester, who is a flyer, although during the more severe portions of the fire season it is probable that a regular transport pilot will be employed.

EDUCATING THE PUBLIC

By Erle Kauffman, American Forestry Association

More than 7,000,000 people saw motion picture shows and heard lectures of the Southern Forestry Educational Project of The American Forestry Association in Georgia, Florida, and Mississippi during the first year of the Project. One-quarter million bulletins and pamphlets setting forth simple facts about woods burning and forestry practices were distributed. In Georgia, with two units operating, fifty counties were completely covered. Seven hundred and ninety lectures and motion picture shows were given to 140,400 people, of which 84,085 were white children and 9,530 colored children. In addition to this, 33,200 people viewed exhibits, were shown motion pictures, and received pamphlets and booklets at three fairs in the State. There were 84,360 bulletins and pamphlets distributed, and 20,925 rulers and book covers bearing a forest fire prevention slogan were given to school children writing an essay or otherwise evidencing unusual interest in forestry and fire prevention. Nearly 3,000 posters were put up.

In Florida there were 638 lectures and motion picture shows, drawing an attendance of 110,405 people from twenty-six counties. Of these 55,826 were white children and 4,594 colored. The two units took part in six fairs, exhibiting to 330,358 people. The number of bulletins and pamphlets distributed was 95,330, while 14,436 rulers and book covers were given out. About 4,500 posters were placed.

One unit in Mississippi covered eighteen counties, giving 600 lectures and motion picture shows to 75,497 people, 47,931 of whom were white children and 5,505 colored children. Exhibits at three fairs reached 21,500 people. Bulletins and pamphlets distributed numbered 63,709, and rulers and book covers 8,627. Five thousand posters were used.

Summing up, the five trucks covered ninety-four counties in the three States, traveling 77,913 miles. The number of lectures and motion picture shows totaled 2,028. The attendance was 326,302, of which 187,840 were white children, 118,833 adults, and 19,629 colored children. Twelve fair exhibits were arranged in which the trucks and lecturers and motion picture operators took part, reaching 385,058 people. There were 243,421 bulletins and pamphlets distributed, 44,008 rulers and book covers, and 12,466 forestry and fire prevention posters.

While the work during the past year has gone forward with enthusiasm and vigor, this fall will see a more intensive program launched. In the beginning there was much to learn about conditions, about the people, especially the attitude of the woods burner. Only a small portion of the literature available was suitable for the purposes for which the Project was conceived, and the motion picture films to be had were not conducive to the best results.

In addition to new material - booklets, pamphlets and posters - prepared by the Forestry Departments of the three States, and the United States Forest Service, the Association has prepared especially for the Project the pamphlet "Woods Fires - Everyman's Enemy."

On June 3, the Association launched upon the filming of a motion picture that would fully meet the requirements of the educational work in the three States. This was completed in July. The picture, titled "Pardners," emphasizes how small land owners may grow timber as a crop with the assistance of State Foresters, and carries a strong fire prevention appeal.

The Mississippi Forestry Commission has cooperated with the Association in the equipment of an additional truck unit. This will enable two units to operate in each of the three States.

THOMAS HUTCHINS - COLONIAL GEOGRAPHER

By E. N. Munns, Washington

To most foresters, the name Thomas Hutchins means little or nothing, yet to him is due the credit of having thrown into the discard Washington's plans of surveying "the western country," as the land to the west of the eastern mountains was known in the 1700's, and substituting for it the present township arrangement, which survey plan has been the envy of many another country. Washington held forth that the "Virginia idea of indiscriminate settlement" should hold sway, which was no more or less than a metes and bounds proposition. Hutchins, however, was appointed by Congress as the "Geographer of the United States" the first and only such civil officer. For many years Hutchins had been in the English army, helping all he could to subdue and hold in check the Indians who with French urging, were making "the western country" an unsafe one. When the Revolutionary War developed Hutchins, rather than serve against his countrymen, for he was born in New Jersey, gave up a captainship, was kept in irons for several months, and finally released under court surveillance for many more months and lost back pay due him for some two or three years for his espousal of the American cause. Hutchins later went to France where he greatly assisted Franklin in presenting and keeping the case of the Americas constantly before the French. Through Franklin's efforts, he obtained recognition in Congress, as on May 4, 1781, Congress appointed "Thomas Hutchins geographer to the southern army." On July 11 Congress resolved that "the geographer of the main army, and also the geographer to the southern army, be styled 'geographer to the United States of America, etc.'"

On May 20, 1785, Congress adopted: "An ordinance for ascertaining the mode of disposing of lands in the Western Territory." In this ordinance, Congress adopted a measure proposed by Hutchins and backed by Franklin which established the basic principles of our land-survey system. The surveyors were ordered "to divide the said territory into townships of six miles square, by lines running due north and south, and others crossing these at right angles."

The first line run in accordance with this act was the line marking the boundary between Ohio and Pennsylvania beginning on the Ohio River due north of the southwest corner of Pennsylvania. The east and west line ran due west from there, and "shall extend throughout the whole territory." Ranges were specified, units of 640 acres provided for, and the present numbering practice of 36 sections established. Hutchins soon discovered, September 15, that the northerly-run lines converged, so he devised the scheme of offsets on standard parallels which corrected for the curvature of the earth.

While Hutchins' chief claim to historical fame rests primarily upon a survey system that makes feasible the exact location of any spot in the country so surveyed, he also determined accurately the boundary of Pennsylvania and Maryland, the boundary between New York and Massachusetts, settled many disputes of survey lines according to the directions of Congress, prepared maps of the "Ohio Country," explored and mapped the Ohio and Mississippi Rivers, described the topography, soil, climate, and timber of the Ohio and lower Mississippi drainage, surveyed west Florida, mapped battle-fields, surveyed a site for a proposed capitol at the falls of the Delaware River, and, at the suggestion of George Washington, provided Lafayette with information on the language of several of the Indian tribes which the latter was gathering to further a universal dictionary then being sponsored by the Empress of Russia.

ROADSIDE PLANTS ENDURE DROUGHT

John W. Keller, forester of the Pennsylvania Department of Highways, reports that 35 per cent of the vines and shrubs planted along the State highways last spring survived the drought. More than 100,000 native honeysuckles, creeping roses, matrimony vines, as as well as 50,000 forsythias, barberries, coralberries and other shrubs were set out. These plantings are designed to prevent erosion and reduce road maintenance costs.

While the utility value is of first importance, Keller said the department is receiving many favorable comments from nature lovers, who believe that any green growth along the roadsides will cover the scars of construction and is to be preferred to bare slopes.

The Roadside Planting Movement throughout the United States is growing rapidly, Keller said. Massachusetts boasts of planting 50,000 shade trees during the past twenty-two years; Indiana of setting out 10,000 assorted evergreens; Michigan of planting 140,000 small pine trees, and California of having 600 miles of planted highways.

In Pennsylvania more than $3,500 worth of plants were purchased this year by interested individuals and organizations and furnished to the Pennsylvania Department of Highways to plant and maintain along the State highways. - Harrisburg Telegraph, Sept. 25

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In France cycle paths, often constructed of reinforced concrete, are one of the standard methods of communication in the forest. These paths are used both by the workmen in the woods and by fire fighters. Some of the forested departments have a regular network of such paths and are pushing the construction of more of them.

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"The War was a glutton for wood. Next to human flesh, clothes and corn, there was nothing it so continually devoured as beams, planks, boards, stakes, wood pulp, shavings, wood fiber, and sawdust." (Arnold Zweig in "The Case of Sergeant Grischa," p.60)

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson, Secretary of Agriculture
February 1, 1905

Forest Service U S Department of Agriculture

Service Bulletin

Contents Confidential

VOL. XIII. No. 42 WASHINGTON, D. C. OCTOBER 21, 1929

THE EFFECTS OF BRUSH DISPOSAL ON LATER PROTECTION COSTS AND LOSSES

By H. T. Gisborne, Northern Rocky Mountain For. Exp. Sta.

When arguments are advanced, and decisions made, concerning the choice between broadcast burning of slash and the method of piling and burning, one important factor is often overlooked. This is the effect on later protection. If the method used is both cheaper to practice and results in cheaper and more efficient subsequent protection, then it should be the most desirable. If, however, a method is used which is cheaper at the time, but produces results which later cause a great increase in cost, then the final check-up may not mark the decision as being very wise.

A series of measurements made by the Northern Rocky Mountain Experiment Station during the last several fire seasons has shown that the degree of fire danger on cut-over areas is materially affected by the living tree canopy, which in turn is often dependent upon the method of brush disposal. The measurements show rather clearly that if the residual stand on a cut-over area is saved from destruction by a broadcast slash fire the shade of these reserved trees produces many more days of complete safety from fire, and reduces very appreciably the number of days when fire will spread rapidly over the area. The measurements also show that if broadcast burning of slash kills the residual stand, and removes this source of shade, the necessity for expensive protection and the difficulty of stopping the spread of fire are raised to a maximum.

The measurements used represent duff inflammability on three exposures, one a fully timbered area receiving a maximum of shade from the forest canopy, one a timber-sale area with half the full canopy removed, and one a clear-cut area with no living trees left and no shade on the remaining fuels. Measurements of the weather elements were obtained at a cooperative weather bureau station maintained by the Experiment Station, with standard exposures of all instruments. All four stations are within a mile of one another, and are within a few feet of the same elevation above sea level.

The compilation and analysis of these daily measurements of weather and duff inflammability have shown that there are "good rains," and "showers," the former producing at least one day of safety from fire, the latter merely causing a little slower rate of spread of fire for a few hours. The results agree with the conclusion, based on experience, that at least 0.20 inches rain is needed to produce safety from fire in this region, but they disagree with the former criterion used by the Forest Service, that such an amount of rain, or more, must fall in one day to produce safety. The measurements show that safety has resulted in nearly all cases from rains of 0.20 or more inches falling in two successive days. Consequently, in this discussion a "good rain" implies at least 0.20 inches of precipitation falling within 48 hours. Rains of less volume than this, or rains of 0.20 inches falling in periods of more than 48 hours, almost always failed during the fire season, to produce safety from fire. The most beneficial results were found following rains of an inch or more occurring continuously over periods of three or four days, while heavy rains of short duration, such as accompany thunderstorms, seldom produced as lasting safety as did the more protracted drizzles.

During the last four fire seasons, the period in which our measurements have been most complete and dependable, there were twenty-six "good" rains in the region containing the three areas studied. Although temperature, humidity, wind, and cloudiness were measured and considered in the analysis of these cases, the rate of development of subsequent danger was found to vary so greatly according to the timber canopy, and regardless of these other weather elements, that the effect of timber canopy was studied with special attention to resultant fuel inflammability.

Six degrees of duff inflammability are recognized by the Forest Service in the northern Rocky Mountain region, in accordance with the results of numerous tests. These six are: noninflammability, very low inflammability, low, medium, high, and extreme. Each of these degrees or zones can be determined if the moisture content of the duff is measured. This is done with the duff hygrometer, an instrument specially invented for this purpose which is now in daily use during the fire season at seven stations in northern Idaho and western Montana. The corresponding degrees of inflammability and duff moisture contents are as follows:

Noninflammability	-over 25% moisture content		
Very low "	-18 to 25%	"	"
Low "	-13 to 18%	"	"
Medium "	-10 to 13%	"	"
High "	- 7 to 10%	"	"
Extreme "	- 7% or less	"	"

The daily measurements of these conditions on three areas during four fire seasons gave the following results in the 26 cases of complete safety due to rain, when no additional precipitation occurred within the periods specified:

First day after the "good rain": Safe from spread of fire in 42 per cent of the cases on the clear-cut area, 75 per cent of the cases on the half-cut area, and 98 per cent of the cases under full timber.

Second day after the "good rain": Safe from spread of fire in only 20 per cent of the cases on the clear-cut area, 50 per cent on the half-cut, and 92 per cent under full timber.

Third day after: Safe 6 per cent on the clear-cut, 33 per cent on the half-cut, and 83 per cent under full timber.

Fourth day after: Never safe on the clear-cut, safe 21 per cent of the cases on the half-cut, and 74 per cent under full timber.

Fifth day after: Never safe on the area without any timber canopy, still safe in 10 per cent of the cases where half the timber canopy was retained, and 60 per cent under full timber.

It is not until the sixth day after good rains, with no intervening precipitation, that the half-cut area reaches the condition which began two days before on the clear-cut area.

From this it is obvious that if the canopy of a residual stand, left on an area after logging, is destroyed by the broadcast burning of slash, one effect will be to decrease very greatly the period of safety following each good rain. Consequently more protection will be needed if dangerous fires are to be prevented. Although broadcast burning may be cheaper than piling and burning, which is sure to spare more of the standing trees, the later increased costs of protection or increased losses, or both, may tend to offset the apparent saving.

But even more important than the decrease in periods of safety is the marked increase in the prevalence of high degrees of inflammability which results from changing a half-timber canopy to no canopy. The big expenses of forest protection result not so much from patrolmen employed for long periods, as from the costs and damages caused by rapid spread of fire when inflammability is greatest. If a residual stand is killed by the broadcast burning of slash, the volume of fuel for future fires is immediately increased, and our measurements show that the duration of medium, high, and extreme inflammability of this greater mass of fuels is also markedly increased. - (To be continued in October 28 issue.)

SOME THINGS OUR WOMEN HAVE DONE

(In District 4)

Mrs. C. T. Gray virtually took the place of a ranger during the extremely bad fire season on the Idaho Forest in the summer of 1928. She acted as fire dispatcher, secured and arranged for transportation of men and supplies, and generally looked after matters while her husband was in the field on fire suppression work.

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During the fire season of 1927 on the Salmon Forest, Mrs. A. H. Wheeler spent several hours assisting her husband put out a fire near Gibbonsville, Idaho.

Mrs. J. L. Phillips discovered and assisted materially in suppressing the Deer Creek fire on the Salmon Forest during the 1927 fire season. She drove a car, making several trips to the fire with supplies. While at the fire she, with Mrs. Bloom, the wife of a sawmill operator, carried water from a nearby stream. This fire was in a bad place in the timber and was very dangerous. It covered an acre of ground before they got it under control.

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Mrs. Green (wife of R. E. Green now resigned) is a trained nurse. She gave first aid to a temporary employee who was seriously injured by a fall from a tree while on telephone work. She spent the night with this employee, who was unconscious for twelve hours, awaiting the arrival of a doctor, there being no doctor nearer than 100 miles.

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The Potts Ranger Station, located in the center of an alkali and barren flat on the Toiyabe Forest, has been in existence for a good many years, and without vestige of verdure surrounding it until during the summer of 1927. The continual previous contention was that due to the alkaline soil no trees, grass, or other vegetation could be successfully grown and that furthermore even though there was good soil the scarcity of water would prevent vegetative growth.

Admittedly the surrounding conditions were not and are not conducive to best results; nevertheless, being of an optimistic nature and not being daunted by adverse conditions, Mrs. O. J. Smith, wife of Ranger A. C. Smith, insisted that at least a shallow covering of good soil be hauled in and placed around the house. This was done, and a number of Russian Olive transplants and some grass seed were furnished by the Service. These, together with some other shrubs and herbaceous plants were planted by Mrs. Smith, and as a result, considering the limited possibilities, the Potts Ranger Station was made not only a glad sight to the eye but also a veritable oasis in a sea of alkali, shadscale, and sagebrush.

The planting was in reality a small part of the job, which can be appreciated when the facts are taken into consideration. The Potts Ranger Station is located in a very arid situation where the average annual precipitation is less than five inches, and the available water supply does not exceed sixty gallons per hour. This necessitated very careful husbanding of the water supply and long hours of careful nursing of the vegetation to meet with success. This Mrs. Smith willingly gave, and a visit to the Potts Ranger Station during the summer months will readily attest the degree of success.

(No doubt the women of the other Districts have performed similar services. Let's tell about them! - Ed.)

ON THE WICHITA

By Charles Allen D. 2.

A head of ponderous size. A mat of hair, dark in color and thick in texture, from which protruded a pair of horns, strong as steel beams set in concrete. Two round, black eyes, still reflecting signs of a savage nature. Long whiskers on chin and lower jaw. A tawny hump of mountainous proportions, sloping back to a pair of dark, trim hindquarters. And beneath it all two pairs of slim legs, with the appearance of being entirely too small for support of such a burden.

Surrounded with fog and gloom, General Lawton, oldest and largest buffalo bull on the Wichita National Forest and Game Preserve, stood at a feed rack in the Exhibition Pasture munching hay.

For hours he had been there, no doubt, when the fog began to lift and the sun shone down on a stately elk. In lordly fashion he walked toward the feed rack. Following him came two cows with calves. Within a dozen paces of the feast he stopped and with head aloft sniffed the air from various angles.

"Just look at my magnificent antlers Mr. Buffalo," he doubtless soliloquized. Mr. Buffalo made no reply, so he turned to his family with head slightly lowered as if to say: "Come on folks, it's all right."

The family some distance behind had stopped upon investigation of their Lord and master. All convinced now that it was practical to approach, the leader again raised his regal head on high, and with majestic grace came on.

Should an imposing elk condescend to eat with a buffalo? Should the buffalo himself question the ethics of it? General Lawton's manner indicated that he did question it. Squaring around he faced the elk, and with lowered head stood glaring at his uninvited guests. Father elk slowed down and, after one or two cautious steps, stood in his tracks. The General undoubtedly presented a formidable barrier to their expected feast, but he of the fine antlers was not in the least daunted. That kingly head went up a trifle higher. A pair of sizable ears were thrown up and forward. In this fashion he calmly looked on.

The buffalo shook his ponderous head and took a tense step forward, as though to charge. A minute of this and one of Mr. Elk's children left its mother and disobeyed its father, by walking up close to General Lawton and sniffing in his face.

The old bison turned to the feed rack and resumed his business of munching hay. Also the elk now advanced and all together, in peace and harmony they partook of the feast.

As to history- On October 11, 1907, 6 buffalo bulls and 9 cows were loaded into two box cars at Fordham Station, New York, for a journey of 1858 miles. These animals were donated by the New York Zoological Society. Seven days later they were liberated on the Wichita. General Lawton was one of the bunch. He led the Wichita herd for several seasons, until finally dethroned by a younger bull, and is the only survivor of the original herd.

And- No man can say how long this unusual bison will live. Twenty-five years have passed and left their mark. Even so, his huge frame still presents a picture of enduring strength. Coyotes may snarl and snap over his bones. Vultures may gracefully sail over his carcass, and the clean winds of heaven will surely sweep his tomb. Then will it be known how long a first class buffalo may live.

WHOOPEE - - HOOPS

By E. N. Munns, Washington

Dictates of fashion have resulted in the slaughter of thousands of animals for their fur, and of birds for their feathers. Now comes another indictment of the feminine sex, for a one-time fashion caused the destruction of thousands of trees. No, not of recent years, one hastens to add, but in a period now so far removed that the fashionable shops attempt to bring it again into style. In the new creations the dress-makers undoubtedly use a wood substitute, but we find in the early records that hoop-staves, for dresses, were valuable in accordance with their light weight, stiffness, and pliability.

Some of the early settlers in the Shenandoah Valley brought hoop staves of high quality on rafts to Alexandria for trans-shipment to Charleston and Savannah. The best of these apparently were made of hickory and oak and the highest quality came from the small trees. How thick were the staves and how long, we are not told. After one has seen some of the household equipment of the Appalachian backwoods, one can realize that these staves could be quite thin and yet serve the purpose to which put in a most admirable manner for the mountaineer's home of today has bed and chair webbing made of one to two inch wide staves, quite thin but strong and pliable. Our rustic furniture used a similar webbing for seats and backs.

The hoop industry probably was a home one, each farmer getting out what he needed from the woods close at hand, but so many hoop-staves were sent out from one section of the Shenandoah Valley that one of the mountain passes is known as Hoop-Petticoat Gap. Records speak of roads being opened to the Great Road leading through this Hoop-Petticoat Gap, and deeds for land describe boundaries in this Gap.

LUMBER CARRIER FOR PACK ANIMALS

By L. L. Hougland, Colville

Packer Smith of the Colville designed an outfit for packing lumber which was used in transporting the lumber to construct a lookout building on Lookout Mountain, which materially cut down the amount of labor in packing.

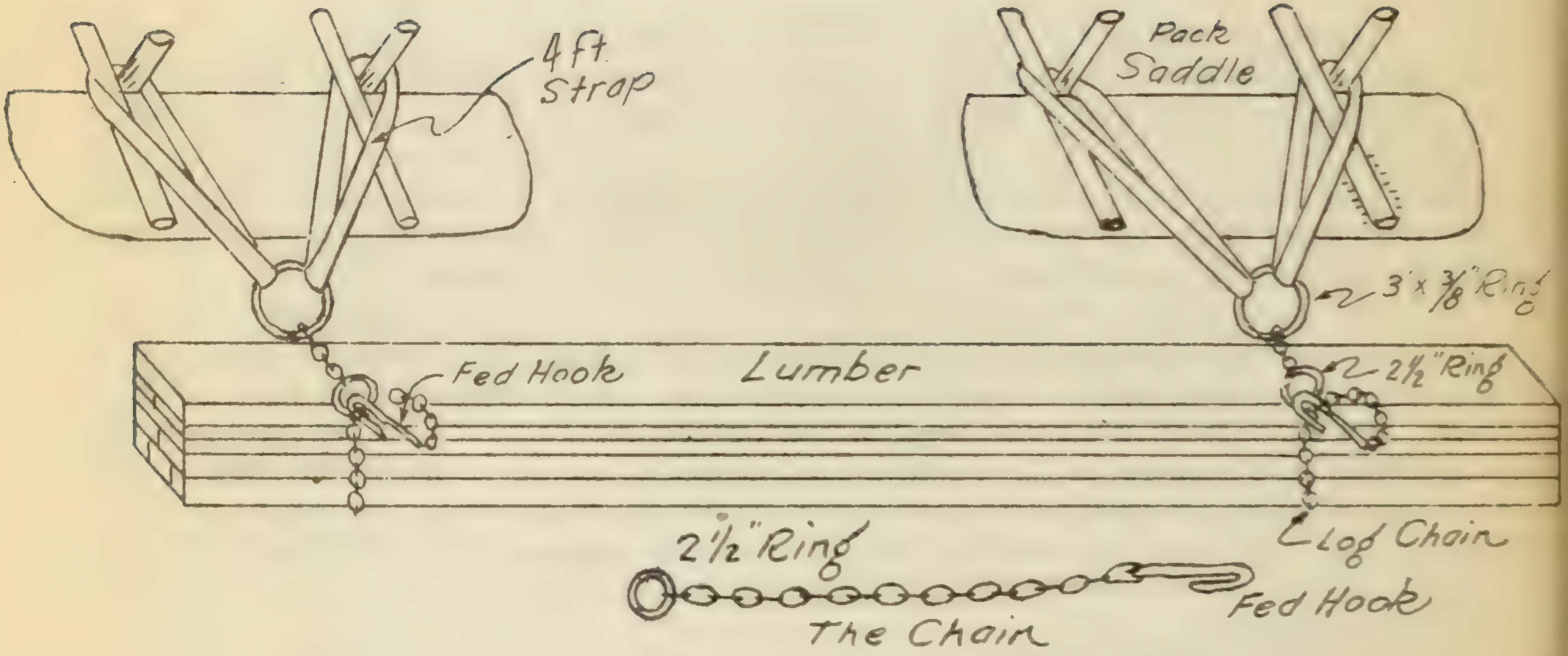
The outfit was used for transporting lumber in length from 10 to 22 feet, using two horses in tandem.

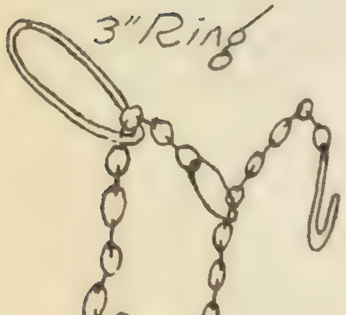
From 150 to 180 board feet was an average load.

Following is a list of material used for making the outfit needed for each horse:

4- Heavy straps 4 feet long and 2 inches wide, with buckles and keepers.

2- 3-inch rings made of 3/8 inch iron.


4 ft. Strap
Pack Saddle
3" x 3/8" Ring
Fed Hook
Lumber
2½" Ring
Log Chain
2½" Ring
Fed Hook
The Chain


3" Ring

The Hook Up

2- pieces of loading chain 4 feet long with a 2½ inch ring attached to one end and a fed hook on the other end small enough to pass through the 2½ inch ring.

To assemble, run two straps through the 3 inch ring and adjust to fit on horses. Run one end of the chain through the same ring, and it is ready for use.

The lumber is assembled in two piles of equal weight.

The chains are thrown around near each end of each pile, cinched tight, and fed hook inserted. Each pile of lumber is then lifted up and the straps thrown over the saddle forks in the same manner as an alforjas and the load is ready to go.

No nails are needed to hold the lumber intact as is necessary when ropes are used, and when once put in place the load "stays put."

Some padding is needed, however, to keep the lumber away from the horse. Two sacks filled with hay and tied together hung over the saddle will give sufficient protection.

YE EDITOR DISCOVERS

During the first quarter of the fiscal year 1930 the National Forest receipts for the sale of timber, grazing privileges, special use applications, etc., showed an increase of $77,204.90 over the same period for the preceding fiscal year. The total receipts for the quarter were $1,583,544.62 as against $1,506,339.72 for the same quarter last year, the increase being accounted for as follows:

Timber sales (including turpentine)	18,265.52
Grazing	60,599.54
Special use	130.69
Fire trespass	2,731.01

There was a decrease of $4,501.51 in waterpower collections and $20.35 in occupancy trespass.

All Districts except District 6 reported increases for the quarter, the largest increase being in District 5 amounting to $128,037.18. District 7 was second with an increase of $48,835.03, and District 3 a close third with $48,272.26. Practically all of the increases in Districts 3, 5, and 7 were on account of timber. While the increase ($44,785.87) in District 4 was principally for grazing, the decrease ($243,070.47) in District 6 was accounted for almost entirely by the reduction of timber operations.

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Government control of mineral development is inevitable, members of the American Institute of Mining and Metallurgical Engineers were told by William E. Colby, San Francisco attorney and national authority on mining law, at a recent meeting of the Institute in San Francisco.

"The necessity for governmental control of human activities is increasing daily," said Mr. Colby, "and this is just as true of the field of mineral development as of other industries."

Charles W. Merrill of San Francisco also addressed the meeting on the mining problems of the West. Mr. Merrill and Mr. Colby both made special mention of the situation which might be brought about in the mining world through carrying out of the Hoover administration proposal to transfer to the several States the surface rights to the remaining 200,000,000 acres of public lands.

"The future hope of the mining industry, so far as the discovery of new mines is concerned, rests largely upon this remnant of the public domain," Mr. Colby asserted.

MR. WRIGHT RESIGNS FROM THE SERVICE

By T. W. Norcross, Washington

On October 15 Mr. Marshall S. Wright, Assistant Engineer and Chief of Maps and Surveys severed his connections with the Forest Service in order to accept a position with the Aerotopograph Corporation of America.

Mr. Wright entered the field service of the General Land Office as a transitman August 1, 1914, and transferred to the Forest Service June 5, 1919, to take charge of Entry Survey activities in District 4. He served in this capacity until January 1, 1921, when he was made Chief of Maps and Surveys in District 4.

On October 16, 1923, he was transferred to the Washington Office of Engineering as Assistant Engineer and in charge of Surveys. On July 1, 1927, he was put directly in charge of the Section of Maps and Surveys, both in the Washington office and in the field. During the time he has been in Washington, he has assisted in the preparation of the Minor Roads handbook, the standardization of signs and in conducting field and office studies to determine the service, usually expressed in miles per hour, of forest roads.

Mr. Wright's new position is as Western representative of the Aerotopograph Corporation of America, a branch of a world organization engaged in making topographic surveys from airplanes, using the instruments and methods invented by Dr. Hugershoff of Germany. Col. Birdseye, Chief Topographic Engineer of the Geological Survey has recently resigned to accept the presidency of this organization. Mr. Wright will make his headquarters in Washington for about a year, when it is expected a branch office will be opened on the Pacific Coast and he will transfer there.

Mr. Wright's long familiarity with mapping and surveying and his supervision of the Maps and Surveys Section for the Districts and for the Washington Office and his knowledge and work in the special assignments have been of great value and importance to the organization. He will be sorely missed not only because of his engineering experience but also because of his faithfulness and splendid cooperative spirit. He will receive a decided advancement in salary over that given by the Government, with prospects of a decided advance in the future.

Our hearty good wishes go with Mr. Wright for success in his new field. It is hoped that in all respects his new undertaking may be fully satisfactory to him.

USE OF RED ALDER INCREASING

By H. M. Johnson, D. 6.

It is conservatively estimated that during 1928 Oregon and Washington produced about 17,000 M board feet of red alder, an increase of about 25 per cent in the last five years. Its chief use is in the manufacture of cheap and medium-grade furniture. That its value for this purpose is being more widely recognized is indicated by shipments to and inquiries from furniture manufacturers from without the State. Considerable quantities are now shipped to California and to a less extent to the Middle West.

The sawing of alder is becoming a more stabilized industry with increased demand. This in turn is resulting in a change in the type of mill producing this material. Formerly the demand was supplied largely by small portable mills, usually of a makeshift character with resulting poorly manufactured stock. The tendency now is to construct more substantial and better equipped mills near easily-accessible stands of considerable size. In this connection there is now under construction near Aberdeen, Washington, a small (about 20 M feet daily capacity) but well-equipped mill for sawing alder lumber to supply the needs of three local furniture manufacturers, by whom it is jointly used. This location is such that logs can be brought to the mill by water, rail or truck.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people ••• Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

James Wilson Secretary of Agriculture
February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 43. WASHINGTON, D. C. OCTOBER 28, 1929.

THE PRESERVATION OF ROADSIDE TIMBER FRINGES

By L. F. Kneipp, Washington

The remarkable expansion of the State and Federal highway system and of the use of that system by motorists for recreational purposes has greatly stimulated interest in the question of roadside beautification so that the highest esthetic value may be derived by the tens of millions who daily travel the public roads of the country.

The first aspect of this movement was a campaign against billboards and other man-made defacements of natural beauty. Next in order came the movement for the beautification of roadsides by the planting of trees and shrubs; a movement which has attained considerable momentum in many of the States and is now recognized by the Federal Government through appropriations for cooperation with the States in the roadside planting of trees and shrubbery.

Almost coincidentally a movement developed for the preservation of roadside stands of timber now in place. One of the earliest advocates of this movement was the Natural Parks Association of the State of Washington, which some five or six years ago initiated an active campaign for the acquisition and preservation of the wonderful stands of virgin timber along the margins of the principal highways of the State. The State Highway Commission of Oregon in some degree has given concrete application to this principle in that it has acquired through donation or purchase a number of narrow strips of timber fringing short stretches of some of the most important roads of the State.

But to-day timber, especially timber abutting on main traveled highways, is worth money; so that the acquisition of any considerable mileage of roadside supporting virgin or mature timber, even though only a few hundred feet in width, runs into tremendous sums far beyond the financial ability of private organizations and of such extent that even the States are at a loss as to means to finance the necessary acquisitions.

As seems to be too frequently the case, the first impulse of the advocates of the movement is to look to the National Forests as a means of solving the problem, not alone within the boundaries of the National Forests but also in far-flung territories remote from the National Forests. The suggested process is that the desired strips of timber along the highways be acquired by granting in exchange therefor equal values of National Forest stumpage.

The Forest Service has been and is sympathetic with the principle involved, but when reduced to a question of actual ways and means it presents a problem of rather dismaying proportions. In the case of one single road in the State of Washington the estimated cost of acquiring the adjoining timber would have been between a quarter million and a half million dollars, and this particular strip of road in terms of mileage probably represented only a thousandth part of the total problem.

The 25 per cent equity of the counties in National Forest receipts sharply limits the volume of National Forest stumpage which could be used for exchange purposes. The self-imposed rule of the Forest Service is that the stumpage granted for exchanges during any year in any State should not exceed in value 10 per cent of the timber sale receipts. Consequently, the employment of the stumpage available for exchanges in the acquisition of roadside strips would mean a practical discontinuance of administrative consolidations within the National Forests. It also would mean that the acquired values would represent esthetic uses exclusively rather than serve the functions of timber production and watershed protection stipulated by the National Forest laws.

The policy of the Forest Service therefore has been that it will continue its present practice of reserving National Forest timber abutting on highways or recreational areas and that it will undertake the acquisition of strips of private land adjoining highways where there is a clear showing of desirability and evidence that the exchange would come within the purview of the exchange laws, but that the widespread use of National Forest stumpage as a means of acquiring abutting strips of timber, not only inside but also outside of the National Forests, would be a step not authorized by the exchange laws or compatible with the purposes for which National Forests were established.

The issue recently has been revived in the State of Oregon and is about due for revival in other sections. The Principle of Roadside Beauty Conservation has many meritorious and appealing aspects which will command considerable public support. Its desirability is not questioned by the Forest Service. It is, however, rather difficult to understand just why the National Forests should be regarded as the exclusive means of its accomplishment when their use for that purpose would involve a considerable curtailment of vitally important National Forest activities. The logical solution would seem to dictate recognition of the movement on its merits as a distinct public proposal to be financed by specific appropriation of funds by Congress and by the States rather than by an indirect appropriation of funds through the employment of salable National Forest stumpage, a method which involves county equities and important questions of National Forest administration and management.

FROM THE D-6 SUMMARY OF FIRE REPORTS (10 day)

Hitting Fires Hard. - Experience during the past season drives home again and again the fact that the season's cost, damage, and area burned could have been sharply reduced if more manpower with competent leadership could have been applied on fires during the first 24-hour period. Getting all fires while they are small and putting them dead out before leaving is the one sure way to cut loss and damage. Small fires may cost more but expenditure of huge sums on large fires will be decreased enough to more than offset this.

The season's record on the Deschutes as well as some other Forests, is directly due to: (a) accessibility, permitting quick attack, (b) lumber companies awake and equal to the situation, permitting immediate application of ample man-power; (c) development and use of motor power on fire-line construction; (d) a forest organization fired with a determination to get every fire the first night regardless of cost. Result: The capture of 57 A fires, the wiping out of 21 B fires, and immediate control before 9 a.m. of the day following origin of 2 C fires, that in spite of a spread to 500 acres in size the first afternoon, were controlled by daylight next morning. When conditions permit and similar action is secured throughout the District, records similar to this year will disappear. - F. H. B.

THE EFFECTS OF BRUSH DISPOSAL ON LATER PROTECTION COSTS AND LOSSES

By H. T. Gisborne, Northern Rocky Mountain For. Exp. Sta.
(Continued from October 21 issue)

When no forest canopy exists to cast shade on the fuels these higher degrees of inflammability have been found to occur twice as often as when half the canopy is retained, both the first and second days following each good rain. On the third day following a good rain the clear-cut area experienced great danger 75 per cent of the time, while the half-canopy area was in this condition in only 45 per cent of the cases. On the fourth day the area without any shade was in great danger 90 per cent of the cases, and the half-shaded area only 60 per cent. On the fifth day there was always great danger on the former area, whereas with a half canopy the higher degrees of inflammability occurred in only 72 per cent of the cases.

During the four fire seasons studied it is apparent that the shade of the half canopy increased the number of days of safety by from 8 per cent to 10 per cent, and decreased the number of days of rapid spread of fire by about the same amount, compared to conditions on an area from which all of the canopy and shade had been removed.

The physical reason for these important effects of sunshine and shade is obvious when one realizes that while the average maximum temperature of the air - in the shade, of course, - was only 80° F., during June, July, and August, 1928, the average maximum temperature one-fourth inch below the surface of the duff on the clear-cut area was 103°, during the same period. Striking as this difference is, it is even more important than it seems, because evaporation of moisture is proportional, not to the temperature, but to the pressure of saturated vapor at that temperature, and these figures are 1.022 inches, and 2.097 inches, respectively. Consequently, the duff exposed to the heat of full and direct sunshine in this case lost water more than twice as fast as the shade temperature of the air would indicate. The average maximum temperature in the duff under a half canopy, exposed to about half as much direct sunshine as on the clear-cut area, amounted to only 96° F., consequently the evaporation of moisture was appreciably less here than where all the shade had been removed.

All of these factors affect length and intensity of the fire season on any area and consequently affect the cost of protection and the probability of losses so long as the debris on the ground remains in combustible condition. But the effects of exposure, temperature, and moisture content will be felt on later protection costs in another way. Although this effect is important, it is not sufficiently great to serve as a reason for doing away with brush disposal in northern Idaho. It is well known by pathologists that rapid decay of wood depends upon available moisture and favorable temperatures. Whenever the moisture content of slash falls too low, or the temperature rises too high, the rate of decay is reduced. Hence, any condition, such as the shade of residual trees, which conserves moisture for more days in the summer and which prevents the occurrence of excessively high temperatures in slash and other fuels, will favor more rapid decay. And rapid decay, of course, reduces the period of years during which any fuels left on the ground will remain as a fire menace. Such a reduction obviously lowers the costs of later protection and damages.

In the July, 1925, issue of the Timberman, Mr. Frank H. Lamb, president of the Wynooche Timber Company, emphasized the fact that one of the best methods of reducing fire danger is to shade the fuels so that they may retain as much moisture as possible as long as possible. The present data substantiate this contention, and show that the timber canopy is a most important control of both the duration of safety and the degree of inflammability of forest lands. Investigations and decisions concerning desirable brush-disposal methods, especially in northern Idaho, probably should consider not only the actual immediate costs of disposal, but also the effects on future expenses and safety from fire, if the decisions are to be of the greatest ultimate value to the operator.

STATISTICS THAT ARE DIFFERENT

Service Family - California District

Class	Unmarried			No.	Married			Children		
	Men	Women	Total	Families	Men	Women	Total	Boys	Girls	Total
Superv's. Headquarters	7	14	21	78	75	78	153	55	48	103
Field force	23	-	23	90	90	86	176	74	68	142
Exp. Sta.	2	4	6	8	8	8	16	9	7	16
D.O.	10	11	21	54	51	54	105	36	38	74

D-5 FORESTS WITH LARGEST "FAMILY"
Plumas - 55
Sierra - 49
Tahoe - 46
Klamath - 42
San Bernardino - 42
Angeles - 41
Average for 18 Forests - 34

Largest number unmarried employees -
Lassen: 8 men, 2 women - Total 10

Largest number of children -
Tahoe, 22 for 10 families; Plumas, 21 for 15 families; Sierra, 19 for 15 families; Klamath, 19 for 10 families; Eldorado, 18 for 7 families; Cleveland, 9 for 2 families, (7 in 1 family).

BIG FAMILIES

Ranger J. B. Stephenson, Cleveland - 7
Rangers M. D. Morris and R. C. Berriman, Eldorado - 6 each
Asst. Supervisor C. A. Morris, San Bernardino - 6

THE MEDITERRANEAN FRUIT FLY

An editorial in The Wall Street Journal for October 3 says: "In its fight against the Mediterranean fruit fly Florida asks three things of the Government--sufficient money to carry on the war until the last fly is dead, compensation to the growers whose products are destroyed in the eradication work, and easing of the regulations to permit marketing of uninfected fruit. It seems no more than justice to grant these requests. This is by no means a local or State matter. The fly is not bound by State lines, but is capable of spreading over a large percentage of the country....Our gross agricultural income from all fruits and vegetables approximates $1,500,000,000 a year. This is equal to the cotton crop, lint and seed, and is about one-eighth of the total agricultural income including that received from all livestock products. A large proportion of that production is threatened in case the fly should get out of hand in Florida. We are apt to think of the fly merely in connection with citrus fruits. This of itself would be serious enough, but that is only a beginning. All deciduous fruits and most vegetables are liable to its infection... More than a million carloads of fruits and vegetables are shipped every season in the United States. A large proportion comes from the warmer States within the range of the fly, extending from Florida to California. The loss of a substantial percentage of this traffic would mean something to the railroads and to the labor that handles the freight. Perhaps the least important item in this business is that of the containers necessary to pack the shipments. But to pack the fruits and vegetables for market requires more than a billion containers, and the business of making them is an industry running into some millions of dollars. Labor in the forests, saw mills, and factories is directly concerned in this matter. But the greatest menace is in the danger of loss to the producers. Some States, such as Florida and California, depend upon fruits and vegetables for a large proportion of their agricultural income. Cut off the purchasing power of any community, State or group of States and the whole country feels the effect of this lessened spending power. Florida is not asking generosity. The fight is not her fight but that of the whole people of the United States, and they should enter it wholeheartedly in order to save a great industry in which all are interested.

"WHAT IS A BUFFALO?

By J. A. Fitzwater, Washington

Under date of September 23 Senator Tom Connally wrote to the Secretary of the Interior advising him that the American Legion Post at Groesbeck, Texas, was planning a huge celebration on Armistice Day, November 11, and desired to secure from the Government one buffalo to be used in a buffalo hunt by Indian Chief Parker, son of Cynthia Ann Parker. In view of the historical setting and connection between the Comanche Indians, the buffalo, Cynthia Ann Parker, and Limestone County, Texas, and the further fact that all profit from the celebration was to be used in erecting a doughboy statue in honor of World War veterans, the Senator desired to know whether the Department would not be willing to donate a buffalo or at least sell it at a nominal sum. It seems that Senator Connally had already taken this matter up with Supervisor French of the Wichita National Forest and had been advised by him that a large buffalo bull could be furnished for the sum of $100, f.o.b. shipping point, plus the cost of crating.

In endeavoring to reach a decision as to the possibility of reducing the price on this buffalo a review of the authority under which buffalo are disposed of by the Department of Agriculture was necessary. It developed that there are three Acts under which such disposition might be handled. (1) The Act of March 4, 1915 which authorizes the Secretary of Agriculture to sell in the open market or to exchange for other livestock such animals or animal products as cease to be needed in the work of the Department. (2) The Act of July 24, 1919, which authorizes the Secretary of Agriculture in his discretion and under such conditions as he may prescribe to supply to any municipality or public institution not more than one American bison from any surplus which may exist in any herd under the control of the Department of Agriculture, and also to make loans to or exchanges with owners of American bison for the purpose of aiding in the propagation of the species; and (3) The Act of February 27, 1877, which provides for the disposal of surplus Government property by sale following advertisement.

There apparently was some difference of opinion between the Office of Accounts and the Office of the Solicitor as to under which of the first and last named Acts the buffalo should be sold. In other words, should the buffalo be considered as livestock under the Act of March 4, 1915, or could it best be considered as surplus property under the Act of February 27, 1877? By no stretch of the imagination could the buffalo be disposed of under the act of 1919 for the purpose contemplated. It was finally decided by the Solicitor's Office that the Act which authorized such sale was that of March 4, 1915, although this was apparently somewhat in conflict with previous rulings.

Since the Act of March 4, 1915, states that such animals must be sold on the open market the question then arose as to the legality of the Department's selling an animal for less than the market value. Previous sales from the Wichita have apparently established a price of $100 for a bull buffalo. Therefore since the market value of $100 has been established the Department cannot very well sell an animal for less than this sum without advertisement. If the Legion so desires, the buffalo will be advertised at a price of $50, the Legion taking their chance on being the successful bidder.

It would rather appear that a little more specific legislation definitely covering the disposition of buffalo and other wild life should be enacted.

YE EDITOR DISCOVERS

Three recent significant happenings were: (a) The meeting of eleven Western State Governors and the passing of resolutions favoring increases in various Forest Service appropriations. (See Sept. 16 issue of Service Bulletin) (b) The statement of Forest Policy adopted by the Board of Directors of the National Lumber Manufacturers Association. (See Sept. 16 issue of Service Bulletin) (c) Resolutions passed by the Western Division of the U. S. Chamber of Commerce favoring Research appropriations, application of scientific forestry methods by private land owners; application of the sustained yield principle on private, State, and Federal lands; reserving Federal-owned timber lands, and placing them under a permanent form of protection; distribution of Clarke-McNary funds on the basis of performance; more finances for prevention of fires on National Forests to decrease cost of suppression.

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The Washington office is busy with the preparation of a book to be submitted to the Appropriations Committee which will set forth the justification for increases requested in appropriations and give, with much more than the usual detail, a statement as to activities under each appropriation and the work under each project. The Appropriations Sub-Committee desires more definite information than has been conveyed by the general statements heretofore presented.

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On Tuesday, October 22, the Protection Board will appear before the Bureau of the Budget to present the needs for forest protection on the lands handled by the Federal land managing agencies. The Board believes that the magnitude of the forest protection problem places it in the same class as the Mississippi Flood Control, the Boulder Dam, and the Inland Waterways. It is suggested by the Board that preferential treatment of allocation of Federal funds should be accorded to forest protection as well as to the other national problems referred to.

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In re the Wall Street Journal's Mediterranean Fruit Fly article quoted elsewhere - we discover that the forests of Florida yield more income than all her citrus fruits plus her canning and preserving industry. We therefore reason as follows: The ability to get money to fight the forest fire evil would seem to be in inverse proportion to the extent of forests and amount of income derived from them.

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"Some Statistics That Are Different," contained in this issue of the Bulletin, is a very human little story presented in figures. The married men and women outnumber the unmarried more than six to one, and we have 335 children, boys and girls, in our California family. We note that a great many of the unmarried men are in the District office, and we should suppose that they, of all people, should be the bold, brave, leaders and show a better example to their fellow celibates, which could of course be done by getting married. Will some of the other Districts send in their family tree?

HE WAS REFERRED TO THE F. S.

(A rythmic ramble.)

"To the President of the United States.
To you my story I will relate:
Your Photo is hanging on my wall.
And has been sienc early last fall
We now will honor and due respect.
The Nations' Choice for President:
And now your honor and good will
Will you find a place for me to fill
I shure would be pleased as my reward.
If I could be your body guard.
Of course to you I am a stranger.
Or an apointment as forest ranger
I can give reference as to my standing.
And be glad to do it if you demand it
I am not afraid of work
And from my duties I will not shurke
I havent much of an education.
And do not ask for a high position
I need the work if you have a place for me to fill
I now leave it to you and your good will"

CHRISTMAS GREETING CARDS

By Harold G. Peterson, Deerlodge

Last Christmas time when I was selecting some greeting cards that I wished to send my permittees the thought came to me that the Forest Service could do a bit of PR work in this manner by adopting some sort of official Christmas card for the many permittees and timber operators that we have and with whom we do business. It may sound unethical to speak of PR in this sense but it occurred to me that there is a possibility of creating a better feeling with our permittees and a recognition by the Government for the business contacts we make each year.

Each year I send a card to most of my permittees and others on the district with whom I have had dealings. I get very few in return, but nevertheless I am reminded that the card was received. If I have dealings with some rider or individual from whom I have got a lot of cooperation or one from whom I think I can get more I usually send him a card at Christmas time. I don't send cards to all of them for the same reason one does not send cards to all of his relatives. I send cards to all of the per diem guards and fellows that have helped me on trail or fire. Occasionally some rancher will air a grouch about the Forest Service every time I have to stop at his place and I make it a point not to forget him, and I might send his kids a roll of funny papers which they have not seen or some other little trinket.

My idea of a card for this purpose would be something simple in style with perhaps a narrow green border and the Forest Service shield. Across the top would be the greeting and in the lower right hand corner a place for the sender to sign his name with the title underneath, the card being sent by the Forest officer having the direct contact with the individual. The signature would give the card a more personal atmosphere than the ordinary greeting card with the printed signature. Designing a card is not a simple matter but I feel that it could be accomplished easily by asking for voluntary ideas among the Forest Service personnel. Three or four individuals could then select the best type of design, that is of course if at least part of the judges are women.

D-6 FORESTRY COMMITTEES INCREASE

By Jno. D. Guthrie, D. 6.

The number of forestry committees in Chambers of Commerce in D-6 has increased, due largely to the efforts of the Forestry Committee of the Oregon Bankers' Association. Oregon now has 17 such Committees, while Washington has only 4. Oregon towns are Albany, Ashland, Astoria, Baker, Bend, Burns, Estacada, Forest Grove, Grants Pass, Hood River, John Day, Lakeview, Myrtle Creek, Pendleton, Portland, Prineville and The Dalles. Washington's four are in Seattle, Republic, Tacoma and Vancouver.

The Oregon Committees did some real effective work last winter in making known to the State Legislature that they were interested in seeing the Reforestation or Forest Taxation Bill passed - and it was passed by both houses, by large majorities.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Forest Service U.S. Department of Agriculture

Service Bulletin

Contents Confidential

VOL. XIII. No. 44. WASHINGTON, D. C. November 4, 1929.

WISCONSIN IS MARCHING ON

By Raphael Zon, Lake States For. Exp. Sta.

The Wisconsin Legislature, after a long session of nearly nine months, has now come to the end. It must go down in history as essentially a forest legislature. It left behind it a crop of forest laws, some new, others substantially amended. Over 20 laws were enacted, some of which are of considerable public significance. To mention only a few:

The Forest Crop Law of two years ago, under which 300,000 acres of land have now been entered--more land than has been entered in any other State having a similar law--, was amended in several important aspects:- the minimum acreage for forest land other than farm woodlots was reduced from 160 acres to 40 acres; the limitation preventing the entry of lands bearing merchantable timber was removed; 50 per cent of the money received under the Forest Crop Law is to be apportioned to the school districts in which the lands lie; counties are exempted from paying the owners' share of ten cents per acre per year on county forests entered under the Forest Crop Law, but the State will pay ten cents per acre per year and collect the ten per cent severance tax, as with other owners.

The Wisconsin Legislature is probably the only legislature in the Union which has recognized expenses for forest practice as legitimate expenditures deductible from the taxable income. The State income tax law was amended, allowing deduction from income for expense of planting or protecting forest crop lands. Some pulp and paper companies have sought, without success, a similar ruling from the Federal Bureau of Internal Revenue.

A big step forward was made in the consolidation of public forests; the Conservation Commission was authorized to sell scattered State lands and use the funds for the purpose of blocking State-owned or county-owned forest lands; the State or any county is also authorized to exchange land for other lands whether publicly or privately owned; any city, village, town, or school district may acquire forests and practice forestry; county boards may acquire county forests without a referendum by laying over the resolution to the next meeting but if ten per cent of the electors petition a referendum the question shall be submitted to the electors.

The maximum for U. S. Forests was raised from 500,000 to 1,000,000 acres.

Much careful thought was given to alleviating the financial difficulties in the cut-over counties of northern Wisconsin. Town boards are specifically authorized to grant or refuse application for new roads; the County Zoning Law was amended to cover areas to be used for agriculture, forestry and recreation; counties taking tax deeds need not pay deliquent taxes until the land is sold by the county, or, if entered under the Forest Crop Law, until the forest crop is taken off.

A new and wholesome departure was made in raising funds to cover expenditures for forestry. In the past the revenue of the Conservation Commission was derived exclusively from fishing and hunting licenses and there was considerable grumbling on the part of fishermen and hunters that their taxes were diverted to other purposes than fish hatcheries or enforcement of game laws. For the first time since the constitutional amendment of 1924, a direct tax for forestry has been authorized. This was set at 1/20 of a mill and is expected to yield $300,000 for forestry. A sum of $150,000 annually was appropriated from State highway funds for building and maintenance of roads in State forests and parks. Furthermore, the Conservation Commission was granted $5,000 a year for two years from highway funds for the purchase of timber strips along highways. The appropriations under the Forest Crop Law, which are an annually increasing schedule up to 1934, were raised; funds were made available to care for a million acres in 1931.

What is even more important than the forest laws is the spirit behind them. The Interim Committee on Forestry has been continued with practically the same membership for another two years. This assures a continued interest on the part of the Legislature in the development of the forest policies for which its work laid the foundation.

Forestry is once more a vital issue in Wisconsin. The Conservation Commission is fully alive to its responsibilities, has the support of the Governor, and is gradually bringing order and organization where before there was only chaos. There is friendly and wholehearted cooperation between the Conservation Commission, the University of Wisconsin, and the Lake States Forest Experiment Station in getting at facts upon which an intelligent policy may be built. The Station has been assured of a fund of from $9,000 to $10,000 for the coming year for forest research in the State.

THE FURBEARERS

By J. N. Langworthy, Shoshone

Yellowstone Park is the greatest storehouse for wild life in the United States. The Park is surrounded on all sides by National Forests which absorb the overflow. The Shoshone Forest borders the Park along its eastern side and among its many wild creatures, are those valued for their fur; bear, lion, coyote, bobcat, marten, mink, otter, beaver, muskrat, ermine, and possibly a wolverine or two. I do not mention badger because I do not believe that an animal so useful in the destruction of harmful rodents should be killed, and hope to see the day when badgers are protected.

Fur attracted the first whites to this region and fur is still an important product of the Forest. When the long winter comes, our guides, who have been entertaining the dudes all summer, disappear into the trapping country and are not seen again until along in February, when they emerge from their fastnesses, long-haired and bearded, with their winter catch.

The State Game and Fish Commission makes a charge for trapping within the Forest and issues trapping permits.

The system in operation on the Shoshone for handling trapping is the result of cooperation between the local Deputy Game and Fish Commissioners and the Supervisor. The Forest is divided into trapping allotments each of which is usually held by one permittee, who as a rule has a partner. The average allotment includes an area of about forty or fifty thousand acres laid out according to watersheds and with a view to ease in following trap lines.

A record is kept at the Supervisor's office. This consists of a base map of the Forest laid out into allotments. Applications for trapping are usually made at the Supervisor's office, since the State officers are harder to find. Each application must be approved by both the local Deputy Game and Fish Commissioner and the Supervisor. The approved application with a check for the fee is forwarded to the State Game and Fish Commissioner, who issues the license which is mailed direct to the trapper. When the fee is paid the trappers name is written across his allotment on the Forest map.

A trapper who holds an allotment one year is given first chance for it the next. This encourages him to take care of his allotment and maintain the stock of fur bearers. A trapping allotment is similar to a fur farm, in a way, if a trapper is so situated that he can look after it and guard it against poaching. This is rather hard to do because many of the guides, when out with hunting parties in the fall, set traps, where a kill has been made, regardless of whose territory they happen to be on.

The use of poison for coyotes in the trapping country must be handled with reat care. Poison must be kept entirely away from marten and fox territory. An understanding in regard to the use of poison has been arrived at between the Biological Survey and the Forest Service.

Trappers are held responsible for strict observance of the game laws and forest regulations within their districts, and if anything unlawful is discovered by them they are instructed to report it as soon as possible.

Some trappers have kept alive, for breeding purposes, some of the finest specimens and have domesticated them. There are a number of fur farms adjacent to and within the Forest. Northern Wyoming produces excellent fur. The animals thus used for producing fur are fox, marten, beaver, and muskrat.

Several fur farms are operated under special use permits. Some of our small lakes are used for raising muskrats and the streams for beaver. A beaver farm should have the exclusive use of a creek so that its stock will not mix with that of another owner. If the beaver increase to such an extent that they use the trees upon which they feed faster than the trees grow and the cover of the watershed is threatened, either the beavers should be reduced in numbers or feeding resorted to. And when dams raise water to such an extent that land supporting conifers or other desirable stands of timber is flooded, the dam should be piped so as to lower the water level.

While the Shoshone has progressed farther in an effort to perpetuate its fur than most other Forests, we are still a long way from our objective. Our experience has given us an insight into what the management of our wild life will eventually develop. In a few years we will probably be working on plans for the management of the wild life with estimates of carrying capacity of our fur ranges and correlating this activity with the many other uses of the Forest. - Clipped from D. 2 Bulletin.

ROAD AND TRAIL CONSTRUCTION

By G. H. Lautz, Washington

To July 1, 1929 $100,798,664 have been expended for the construction, improvement, and maintenance of forest roads and trails. The source of this money was as follows:

10 per cent	$6,293,113
Section 8	9,865,985
F.F.R.C.	9,000,000
F.H.	32,453,559
F.R.D.	23,040,810
Total Road funds	80,653,467
Other Gov't funds	1,740,151
Cooperation	18,405,046

The above amount constructed 16,730 miles of forest roads and 47,175 miles of trails and also has maintained 17,422 miles of roadway and 62,275 miles of trails. The average cost of all roads as constructed to date was $4,614 per mile of which the Major Projects, as constructed by the Bureau of Public Roads, cost $13,764 and the Minor Projects, as constructed by the Forest Service, cost $1,355. The average cost of trail construction to date was $175 per mile.

The expenditures as made during the fiscal year were divided among the various road funds as follows:

10 per cent	$419,180
Section 8	164,942
F.F.R.C.	13,263
F.H.	5,100,360
F.R.D	3,801,945
Total road funds	9,499,690
Other Gov't funds	162,522
Cooperation	1,523,232

The grand total of these is $11,185,444 and this accomplished the construction of 2,013 miles of roads, 7,453 miles of trails and the maintenance of 17,422 miles of roadway and 62,275 miles of trails. The average cost of roads constructed by the Bureau of Public Roads during the fiscal year was $21,197 and those by the Forest Service $1,233. The average cost of all roads constructed and improved was $3,969. The cost of trail construction during the past year was considerably less than the average cost to date; the former was only $139 per mile while the latter averaged $175.

The revised forest road and trail system includes 61,131 miles of roads and 131,087 miles of trails; of the former 15,332 miles are Forest Highway, 75 per cent of which is included within the National Forest boundaries. The Development road system totals 45,799 miles, 87 per cent of which is within the forest boundaries 98 per cent of the total trail system is within forest boundaries.

39 per cent of the Forest Highway System has now been completed to a satisfactory standard. There remain 9,329 miles of non-existing and unsatisfactory forest highways whose construction is estimated to cost $152,648,000. The Forest Development System has 42 per cent of its roads completed to a satisfactory standard; there remain however 26,520 miles which are proposed for construction and which are of unsatisfactory standard. The amount required as estimated for their completion

is $56,395,000. The average cost of completing the remaining Forest Development System is $2,126 while that for the Forest Highways is $16,363.

The trails have fared better than the roads since 69 per cent of the system has been completed to a satisfactory standard. However, 40,704 miles of trails still require construction and improvement. The estimated cost is $5,286,000, representing $130 per mile.

The amount expended for maintenance this fiscal year shows an increase over that of last year. Trail maintenance has increased from $398,127 to $415,949. Major Road maintenance increased from $508,120 to $529,622; while expenditures for Minor Road maintenance showed an increase of $21,822, this year's expenditures amounting to $415,949 and last year's $398,127.

With the exhaustion of the F.F.R.C. fund and the Section 8 fund, the only money now available for the construction of forest roads and trails is from the 10 per cent, Forest Highway and Forest Road Development funds. The former showed an increase over last year but is usually around $600,000. The Forest Highway and Forest Road Development funds have in the past been $7,500,000 annually.

YE EDITOR DISCOVERS

Four members of the Northeastern Forest Research Advisory Council, whose terms have just expired, have been reappointed by Secretary Hyde for another three years. Those reappointed were: Professor J. W. Toumey, Yale Forest School; Mr. W. R. Brown, The Brown Company, Berlin, New Hampshire; Mr. R. S. Kellogg, Secretary, News Print Service Bureau, New York City; and Dr. W. L. Slate, Jr., Director of the Connecticut Agricultural Experiment Station, New Haven, Connecticut. The Council serves in an advisory capacity in developing the research program of the Northeastern Forest Experiment Station.

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On July 1 a professorship of Forestry was established within the Department of Horticulture and Forestry at the University of Arkansas. Research in problems which are presented by Arkansas forest conditions will be conducted.

A course in the first principles of Forestry has been offered by Professor Cooper for some years past and the new work represents an expansion of the field by the University in preparation for the statewide program of forestry and conservation which it is felt will eventually be established in Arkansas.

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Honorable Chase S. Osborne of Sault Sainte Marie, former Governor of Michigan and a distinguished graduate of Purdue University, Lafayette, Indiana, has presented 5,200 acres of virgin hardwood lands in the upper peninsula to his alma mater. The lands are in Chippewa and Luce Counties, well located for economical logging and lumbering or the practice of forestry, and their value is estimated at $200,000.

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The appropriations for the current year provided funds for a study of forest insurance. The objects of the study are to determine the feasibility of forest insurance, to develop principles and to devise methods for bringing about a workable system of insurance in the important forest regions and eventually in the whole United States. Mr. Harold B. Shepard has just been appointed to the staff of the Office of Forest Economics to initiate this study. Mr. Shepard comes to us after some 10 years' experience as forester for pulp companies and as consulting forester, together with 4 years in fire insurance work. He will spend the next few months in making a preliminary survey of the field, and will then transfer to the Pacific Northwest, where the study is to be concentrated at the outset.

Kittredge of the Lake States Experiment Station and Munns of the Office of Forest Experiment Stations have returned from Europe, where they went to attend the International Congress of Forest Experiment Stations. After the meeting at Stockholm Kittredge made a tour of Norway, Finland, Esthonia, Latvia, Scotland, and France and Munns visited Denmark, Poland, Germany, Czechoslovakia, and Switzerland. Investigation was made of the manner in which forest research is being conducted, the organization of work, and the technique followed, nearly all of the experiment stations and forest research centers having been visited in the countries mentioned. We are expecting these men to furnish us for use in the Service Bulletin a number of interesting articles on their findings.

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Supervisor Schreck of the Huron has started a new contribution for planting. He has an organization called the Junior Chamber of Commerce in Michigan which is planning to contribute money to do some planting in the Huron.

CELLULOSE

"ITS FUNDAMENTAL SIGNIFICANCE FOR THE SOUTH."

By N. Brenizer, Washington

The following abstract from a lecture delivered before the Institute of Public Affairs and International Relations in Athens, by Dr. Charles H. Herty will have more than passing interest to the members of the Forest Service.

Dr. Herty now recognized as one of America's foremost chemists, has been for a long while an Industrial Consultant, with offices at 101 Park Ave., N. Y.

Time was when he came with us, as a member of the Forest Service. He was working out a cup and gutter system and a more conservative method of gathering turpentine than had been formerly practiced. In this work he was preeminently successful, and by his promulgation of proper cutting and gathering the crude turpentine, his system saved thousands upon thousands of dollars in the turpentine fields of the South.

He states that "Vast potential wealth is in the air of the South at this moment - Wealth that could amount to seventy billion dollars within the next forty years." And adds,-

"This is not a figure of speech, but a statement of fact. Through the longleaf pine belt of the South Atlantic and Gulf Coast States, there are enormous crops of massive cones of the longleaf pine tree. Every seventh year this tree bears heavy fruitage, each cone carries more than a hundred individual seeds within its scales, each seed a potential tree, requiring for planting no labor of man, only the force of gravity, each seed provided with a wing finds wide distribution by the winds. The number of seedlings is enormous.-- A photograph from Alabama shows an equivalent of 62,000 seedlings per acre, only a thousand of which are needed for complete reforestation, and the South has 100,000,000 such acres."

"Was ever such potential wealth placed so freely at the disposal of man?" "Will this great gift of nature be husbanded? Saved from ground fires which annually sweep this section?

"Now, in this abundant year of harvest, is the time to take vigorous measures as to fires and taxation to safeguard this future supply of cellulose, for by the time this year's seed crop is ready for marketing the industrial world will be looking to the South for an enormously increased supply of cellulose.

"This is an age of cellulose we are now entering. Many new industries are using cellulose in rayon, lacquers, cinema films, artificial leather, sausage casings, insulating materials, pressed boards, along with the older industries of celluloid guncotton and textiles.

"These industries are based upon a very limited number of reactions. The molecule of cellulose is very complex. We know it is composed of three elements—carbon, hydrogen, and oxygen. We know that the atoms in the molecules are in the proportionof six to ten to five, but what multiple of this ratio gives the true picture we do not know. All too little is the research of this country thrown into this important field. But one thing we do know,- that cellulose is formed within the living plant or tree, by the action of sunlight, and this formation is accelerated by warm rather than cold temperature. For this reason the South is preeminently that portion of our country which may count upon its advantages in cellulose production."

There is an enormous yield of cellulose.

"Through the activity of this natural chemical factory are the myriads of chloroplasts, the cells of the pine trees. All we have to do is to furnish the ground and protection from fire. The cotton crop of the South furnishes the purest form of cellulose known in nature,- but it is difficult and expensive to raise. The pine tree crop costs about 8 cents per acre per year, produces not only cellulose but in close association therewith great quantities of lignin, now a waste product, which some day when science has solved the problem of its constitution is destined to play an important role in our economic system."

ENGELMANN SPRUCE AS A TIE SPECIES

Dr. J. D. MacLean from the Forest Products Laboratory at Madison is now spending several weeks in the District demonstrating Laboratory methods of treating Engelmann spruce railroad ties on a commercial basis, using equipment and material available in local treating plants. These methods have worked out quite satisfactorily both from his standpoint and from the standpoint of those in charge of the plants, and bid fair to raise the standing of Engelmann spruce as a tie species in the estimation of the railroads.

A feature of particular importance is that although Engelmann spruce takes up less fluid than lodgepole pine, due to the excessive absorptive capacity of sapwood in the latter, it is as easily treated as the heartwood of lodgepole pine and because of uniform absorption does not cause the waste which may result where there is a marked difference in absorption between heart and sapwood.

A final conclusion is that treatment of sufficient duration to guarantee proper penetration in the heartwood of lodgepole pine will guarantee satisfactory results with Engelmann spruce without the wasteful over-absorption in the sapwood.

During his stay here, Dr. MacLean addressed the Colorado Engineering Council of which the Rocky Mountain Section of the Society of American Foresters is a member organization. - District 2.

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"Give me five gallons", said a swarthy Mexican as he lifted out a half dozen of his offspring and removed the front cushion exposing the gas tank of his "Model T".

Ranger Beals of the Rio Grande, the party addressed, was putting a coat of red on one of those old style, cylindrical fire tool boxes. - D 2 Bulletin

CITY PLANTS TREES

By Lee P. Brown, Crater

Last spring, the City of Medford, Oregon, secured seven thousand western yellow pine seedlings from the State Nursery at Corvalis, which were planted under the supervision of this office on property belonging to the City at Big Butte Springs, in the city watershed.

The local Boy Scout organization, under Mr. Brown's supervision, spent a day on the area and planted between two and three thousand trees. The remainder of the area was planted by employees of the City, under instructions from Mr. Brown. The area has been logged recently, and it is rather difficult to find locations free of debris and logging slash. Part of the ground was mucky and part of it very rocky. A stand of second-growth white and Douglas fir partially shades the area. Mr. Rankin originally designated the trees for cutting on this area, and Mr. Brown later did some marking for the City to log its land. Part of the, latter was not completed until after the trees were planted, but even in the logged area 70 per cent of the trees still survive, and on the remainder of the older cut-over area considerable more than 90 per cent of the stand survives, the seedlings making from 1 to 4 inches of growth this year. The result seems so promising that the city is going ahead with a definite reforestation program for the land it is acquiring in and around Butte Springs and has employed three men most of the summer to pile slash and debris for burning this fall, with the expectation of further planting in the spring.

Frank C. Dillard, hydraulic engineer, who had charge of the installation of Medford's new water system, believes throughly in the practice of forestry as a means of watershed protection. We are proud to state that the city now owns several hundred acres in watershed, all of which are within the new addition to the Crater National Forest.

HIGHWAY TRAFFIC GROWING RAPIDLY

Highway traffic in California will be double the present status within eleven years, according to reports from the Division of Highways. The volume of tarffic on the State roads has increased at the rate of nine per cent annually for the past five years. If this continues it will be double by 1940, according to estimates

One of the interesting features of the biennial count of traffic which was taken at 956 separate stations in this State is that recreational traffic increased 31 per cent, while the average increase on all traffic was 9.6 per cent. Another interesting feature is that the traffic on interstate connections increased 17.5 per cent, indicating that the influx of tourists from outside the State is increasing twice as fast as the traffic within the State.

This study would indicate, according to club officials, that California must continue its systematic and progressive highway development. – D 5 Bulletin.

WE HAVE BOTH

In business, as in diet and parlor games, we are prone to snatch at fads. A few years ago it was efficiency. Today it is Research. And a whole lot of those who fall for the selling talk about research never quite know what they are buying.

A purist might say that a good simple way of telling which kind of research a man is talking about is by his pronunciation. If he calls it research, it's the real article. If he calls it research it's the bunk! D 7 Bulletin.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people . . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 45 WASHINGTON, D. C. NOVEMBER 11, 1929

EVENTS OF THE HOUR IN CONSERVATION

(News Release by American Forestry Association)

President Hoover on October 30 was asked to support a balanced program of Federal forestry activities when more than fifty leaders in forest conservation, representing twenty-two national and regional organizations, gathered at Washington at the invitation of the American Forestry Association. The president was also told the need of greater measures and appropriations to safeguard the public forests from fire.

"We simply ask that appropriations authorized by laws which have been enacted and now appear in the statute books be granted," George D. Pratt, president of the American Forestry Association, told the President. "The Woodruff-McNary Bill, passed in 1928, authorized an appropriation of $8,000,000 over a period of three years. The first year the full appropriation was granted under stress of special needs. For the past fiscal year, however, the appropriation was cut by $1,000,000. Unless this appropriation authorized by law shall be granted, there is no continuing the policy upon which the administrative departments of the government depend for the advancement of its work."

Mr. Pratt also made an appeal for adequate measures in forest fire protection, pointing out that the appropriation of $100,000 a year is wholly inadequate. The nation lost $3,000,000 in forest fires this year, he said, and it cost $2,500,000 to suppress fires on National Forests alone.

Hon. Robert P. Bass, former Governor of New Hampshire, and one of the outstanding conservationists of the nation, told the President that his leadership was needed in the formulation and execution of a national policy of forest development and conservation which will give reasonable assurance of meeting the future economic and social needs of the country.

"As the first step to that end," he said, "we petition for larger appropriations under existing congressional authorization for forest fire protection, reforestation and tree planting, the purchase of forest land by the Federal Government, and research."

The other spokesman was John W. Blogett, of Grand Rapids, Michigan, representing the lumber industry, who pointed out the needs of industry for forest research and protection on an adequate scale.

At the luncheon tendered the visiting delegates by the American Forestry Association, Secretary of Agriculture Hyde advocated a stronger tie between agriculture and forestry, particularly in the reforestation of marginal and sub-marginal lands unsuited for cultivation. He pictured this need as one of the greatest purposes of the forestry movement.

Major R. Y. Stuart, Chief of the Forest Service, pointed out the need for the creation of a more far-reaching national program of forestry giving especial attention to the following:

(1) Aggressive cooperation with forest owners and industries to abolish destructive forest exploitation and to create cooperative agencies to this end; and to stimulate a larger industrial participation in an enlarged program of forest research;

(2) Public assistance in strengthening and stabilizing the forest industries in order that they can undertake orderly production and continuous timber-growing as an industrial enterprise; and increased advice and assistance to farmers and other small forest owners;

(3) Investigation of the importance and feasibility of public measures to prevent destructive forest exploitation, including a study of public measures to this end in other countries;

(4) Larger public and private participation in forest fire protection in order to make it universal and effective;

(5) Large extension of Federal and State ownership, an immediate and assured means of restricting the field of destructive exploitation by bringing a larger proportion of the forest area under productive management as a measure of public security. Gradual program of land classification to correlate the utilization of land for forests, agriculture, and other purposes.

(6) Making public forests fully productive, especially through complete protection, more intensive management, and an adequate program of planting.

(From the United States Daily of October 21)

Increased appropriations for the protection of National Forests have been proposed to the Bureau of the Budget in a brief submitted by Representative Summers, of Walla Walla, Washington, a majority member of the House Committee on Appropriations.

It was stated orally at the Bureau October 19 that representatives of conservation movements, headed by the American Forestry Association, also had called at the Bureau to urge increased appropriations for forest protection.

Mr. Summers told the Director of the Budget that mills and fires have moved the center of lumber production 3,000 miles westward in the last 50 years, and that now "we have reached the last great stand."

He appealed to the Budget Bureau to sanction increased expenditures to avoid destruction of the forests, and to support conservation policies already enacted into law and recommendations that have been made by the Forest Service. Mr. Summers said he submitted no specific figures.

The full text of his brief follows:

"Mr. Director: Accompanied by the Chief Forester of the United States, the members of our Appropriation Committee for the Department of Agriculture spent several weeks during the past summer studying National Forest problems in the Northwest States and in Alaska. We sought difficult localities and hard problems.

"We studied forest problems in the Timber Products Laboratory at Madison; in the exhausted forests of Minnesota; forest nurseries and experiment stations of Idaho and Washington and California. We visited the world's largest logging and milling operations at Tacoma, Longview, and other places. We studied old burns and new burns. We studied second growth and the effect of reburning.

"We traversed narrow forest auto trails cut in precipitous mountain sides a thousand feet above the trees tops. We drove over many canyons on winding railroad trestles without guard rails. In short, we went to the heart of the forests and tried to learn the problems with which the Forest Service grapples. It was a strenuous but profitable summer.

"The fire demon is the big problem. National Forest fires in Washington and Oregon burned 300,000 acres and cost near $1,000,000 for suppression during the past four months. Nearly 1,400 fires in these two States. Millions of feet of standing timber destroyed. The loss of watershed covering was yet more serious.

"Three thousand firefighters manned the lines in the Wenatchee, Colville, Chelan, Rainier, Olympic, Mt. Hood, Wallowa, and other Forests.

"Fire camps were burned and ranch houses, barns, and fences destroyed. Summer homes, schools, logging camps, bridges, and telephone lines went down. The charred carcasses of wild animals told of their losing fight.

"Saddest of all, Douglas C. Ingram, that noble Forest Service officer of Portland, Oregon, and Ernani St. Luise, University of Washington student and athlete, and several other fighters and homesteaders were burned to death or otherwise killed. Smoke and gas made lurid the sky and revealed only a blood-red sun to towns and cities 100 miles away. During 99 days desolation squandered the nation's forest in the Pacific Northwest.

"With limited equipment, forest forces battled 1,800 fires in Montana and Idaho. Sixteen hundred of these were accessible to roads and trails and, therefore, were stamped out when they had burned less than 10 acres each. In two months the other 200 fires licked up 200,000 acres that two generations cannot restore.

"Meanwhile 25 fires, ranging from 1,000 to 40,000 acres each, were consuming 325,000 acres of watershed covering and scores of homes in California. Nearly 3,000 fires--large and small--burned more than 600,000 acres in fields, brush, and timber in that State during the summer.

"One thousand and sixty-five of these fires were caused by smokers and 364 by incendiaries. A startling state of affairs. Nevertheless the situation must be met.

"The magnitude of our forest-fire protection problem is apparent when we confront the facts.

"Fifty-seven hundred fires originated wholly within the National Forests during the past four months; $3,000,000 was expended during that period for fire suppression; more than $5,000,000 of merchantable timber destroyed. The volume of young growth and watershed covering burned is beyond computation but probably runs into tens of millions.

"An intimate study of 13 National Forests during the present summer has convinced me of the need of more forest roads, trails, firebreaks, telephone lines, equipment, and trained fighters. With such equipment fires will still occur but losses will be reduced to the minimum.

"I have come before the Budget Director to present the situation as I found it.

"No thoughtful citizen can spend 60 days in lumber camps and old burns and delving deep into our remaining stands of timber without serious reflection.

"Mills and fires, during the past 50 years, have moved the center of lumber production 3,000 miles westward to the very shores of the Pacific. What of the next quarter or half century? We have now reached the last great stand.

"That National Forests should necessarily be self-supporting from year to year is not tenable. It is an unsound national policy. Big timber sales and overgrading could easily show large balances, but the next generation would be deprived of timber, water, recreational areas, wild life, watershed coverings and hydro-electric power. Erosion and floods, this nation's giant twin problems of the future, would be multiplied many fold.

"Protection and conservation of our forests by the past generation would have obviated the disastrous floods of recent times and made unnecessary the expenditure of $400,000,000 on the Mississippi today.

"These forests that we today permit to burn were lifting their heads heavenward before the discovery of America. They have looked out over four centuries of human history. They have seen the rise and fall of principalities and kingdoms and empires. Scarcely a commercial tree among them was not rooted to mother earth when we published to the world our Declaration of Independence. They have grown as this Nation has grown. They are a part of our inheritance. They belong to future generations. We are their custodians.

"Every village of a thousand souls, presided over by its town council, has reasonable fire protection for its property. Ninety days of drought has demonstrated that this wealthiest nation of the globe has not provided similar protection for her forests, worth billions of dollars.

"In this city built of brick and stone and concrete and steel a fire is manned in a few minutes by trained fighters and equipment. In a National Forest, built of tinder, the fighter, who is often untrained, reaches a rapidly spreading fire with only a shovel, ax, and mattock, from two hours to four days after its discovery. Unless our policies are changed, this condition will not be wholly overcome for 36 years, while the merest tyro knows, that time is the essence of successful fire fighting.

"An awakened public conscience will no longer tolerate this short-sighted economy, which means increased expenditures in the long run and the certain destruction of our forests. We ask you, Mr. Director, to support the conservation policies already enacted into law by the Congress and the recommendations brought to you by the United States Forest Service."

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(Report of the Washington Society of American Foresters Meeting, October 24)

The question of what to do with the public lands, which has lately been brought forcibly to the public attention, was the subject of some spirited and clarifying discussion at an open meeting on October 24 by the Washington Section of the Society of American Foresters. Present were a number of men who are directly concerned with the solution of the problem and will probably have considerable to do with bringing it about, whatever that solution may be. These included Secretary Wilbur and Assistant Secretary Dixon of the Interior Department, Senator Nye of North Dakota, Chairman of the Senate Public Lands Committee, Congressman Colton of Utah, Chairman of the House Public Lands Committee, Congressman French of Idaho, who has introduced a bill on the subject, and Congressmen Summers of Washington and Addison T. Smith of Idaho.

The meeting was given over to a symposium on the public domain question. Suggestions as to how to deal with the public lands ranged all the way from turning them over to the Forest Service in entirety to giving them over to private ownership. It was unanimously agreed that the situation is critical and that whatever course may be taken must secure adequate provision for grazing control and watershed protection on these badly abused areas.

Secretary Wilbur, who played an important part in bringing the public lands question so dramatically to the fore by the recent proposal to turn the surface rights over to the States, said that he considered the method of secondary importance so long as the ultimate objective of adequate protection and regulation of public lands was attained. Opinion was divided as to whether the States could be entrusted to bring about the desired regulation.

Congressman French explained in detail his bill which would provide for establishment of the control of grazing and timber on the public lands under the Department of the Interior similar to that in effect on the National Forests.

RADIO COMMUNICATION ON THE NATIONAL FORESTS

By Roy Headley, Washington

The net result of the general check-up which Mr. D. L. Beatty of District 1 has been making on low power radio communication for the last two years indicates that our faith in its possibilities for National Forest communication will be fully justified. Loss in signal strength due to absorption by timber and the effect of topography on radio communication have been pretty definitely determined by Mr. Beatty. These questions about radio communication had never been answered by the work of the Bureau of Standards or other agencies and the Service had to know about such things before launching upon a program of using radio to supplement our telephone systems.

Unless something happens to upset the present plans, the first installation of radio for practical use will be made next season on the Columbia National Forest. It is expected that a central receiving and sending set will be installed at the dispatcher's headquarters at the Hemlock Ranger Station and a small number of portable sets will be purchased for use by trail crews and the Forest Supervisor, who is experienced in the use of code and short wave lengths. The Wind River Branch Experiment Station and the Hemlock Ranger Station are located side by side, and one member of the experiment station staff is Mr. Simson, who has devoted several years to the study of static and electrical storms. Mr. Simson at one time in his career was a professional radio operator and will contribute valuable assistance to the first trial of radio on the Columbia next season.

SUSPENDED YIELD

Here is an interesting side light on forest denudation and the uses of wood from a one-time wooded land. The 1926-27 report of the Minnesota Northeastern Agricultural Experiment Station, near Duluth, Minnesota, contains the following statement:

"The age of steel and concrete has reached the Duluth station. Steel fence posts have replaced wooden ones. New concrete yards surround the hog barns. Wood is still used for fuel but another year will see the end."

Shades of the trees! A report made to the Secretary of Agriculture in 1865 -- I believe that was the date -- said of the region, "The entire northern end of the State (Minnesota) is an unbroken forest that will meet any demand that can be made upon it for hundreds of years to come." The quotation is from memory and probably is not exact, but the words were to that effect. Probably only foresters will wonder why the Minnesota Northeastern Agricultural Experiment Station does not at least retain a woodlot. H. R. F., District 1.

MODERN MARY'S LAMB

Country school busses were a novelty just a few years ago and now Mary's little lamb goes from the range to market likewise. A few leading sheepmen of the Mono are trying, for the first time, what appears to be a distinct advance in transportation over primitive driving methods heretofore used.

A fleet of commercial freight trucks finding business lax at this period has been double-decked and each provided with a trailer. One truck with trailer has a capacity of one hundred head of lambs which loaded at the range are landed at shipping points in a few hours instead of being driven a number of days over routes almost void of forage.

Sheepmen estimate that driving shrinkage averages some four pounds per head, most of which is avoided by trucking. - D. 5 Bulletin

YE EDITOR DISCOVERS

On November 1 the fire season was still going strong in California - which is not unusual - but the last reports from District 6 and District 1 indicated that emergency guards are still on duty in both Districts - which is unprecedented.

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The Forest Products Laboratory, in cooperation with the Camp Manufacturing Company and the Appalachian Forest Experiment Station, is now conducting a mill study at Franklin, Virginia. In this study several different methods of cutting are being followed, varying from clear cutting with seed trees to true selective cutting. About 150,000 bd. ft. will be cut over. Each tree, the logs cut from it, and the boards cut from the logs are to be given the same number. In this way the results will show the quality, quantity, and value of lumber cut from each individual tree. It is expected that a good deal of information will be obtained on profit or loss in cutting small trees, defective and crooked trees, as well as well-formed, sound ones.

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A meeting of representatives of the various Districts has been called for November 17 at Denver. The purpose of the meeting is to have the various representatives cooperate with Mr. Keplinger in outlining the course on personnel management, which will be given for Supervisors during the coming winter. This will make the third all-Service discussion course carried on under the leadership of Mr. Keplinger.

BREAKAGE NO OBSTACLE TO SELECTIVE LOGGING

The loss of reserve trees in logging need not be a bugbear in selective cutting. Experimental cuttings at the northern hardwoods field station in the Upper Peninsula of Michigan show that the damage in selective logging to reserve trees by accidental breakage is not as serious as most people fear.

The losses in three selective cutting operations, covering 46 acres, amounted in "very light" improvement cutting to 0.5 per cent and in both "light" and "heavy" cuttings to 2.1 per cent of the total number of trees above 2½ inches in diameter in the original stand. Most of the trees broken are usually small trees between 3 and 8 inches in diameter breast high.

On one 8-acre plot, for example, in a heavy selective cutting the trees broken were distributed by size as follows: 13 trees between 3 and 5 inches in diameter, 9 trees between 6 and 8 inches, 2 trees between 9 and 11 inches, 3 trees between 12 and 14 inches, and 1 tree in the 15-17 inch diameter class; or a total of 28 trees. This makes 3½ broken trees per acre, mostly of small sizes.

On the basis of merchantable volume, the "loss" was almost negligible—21 board feet per acre. This is only 0.4 per cent of the original volume, or 1.1 per cent of the reserve volume. Even this loss was not a real loss, as the trees broken were cut up into logs and used.

On the other hand, in very heavy cuttings in which 92 per cent of the total volu was removed—cutting approaching commercial clean cutting—the breakage was considerable, amounting to 26 per cent of the total number of trees in the original stand.

Of course, in addition to trees so completely smashed that they had to be cut, many tops and branches were broken off and boles scarred up. This not only injured the form and vigor of the tree, but may open the way for decay to enter. It has not yet been determined just how serious this type of damage may prove to be.

A further unnecessary loss of small trees often results from excessive swamping for skid trails and roads, and unregulated cutting of material for corduroy, car stakes, etc.- Lake States Forest Exp. Sta. Technical Notes

MISS ADAMS RETIRES

Miss Bertha E. Adams will retire voluntarily from the Forest Service on November 28, 1929, terminating a period of 39 years in the Government service. She was first appointed in the Interior Department on November 18, 1890. When the National Forests were transferred on February 1, 1905, she came to the Forest Service with other employees in the Forestry Division of the General Land Office. For the ensuing four years she was engaged in clerical work involved in lands activities then centering in Washington. She was transferred to Operation in 1909 and after two years of miscellaneous work was placed in charge of the section of stenography and typing. During the 18 years of her continuance in this assignment many employees under her supervision have been inspired and helped by her wise counsel and lofty ideals of service.

On October 31, the last day of her active service, Miss Adams was the recipient of a traveling bag and accompaniments from her fellow workers and of flowers sent by the Department of Agriculture. Addresses were delivered expressing the warm regard of her associates. The following tribute by the Forester was received by Miss Adams:

"On the eve of your retirement from the Forest Service I want to express to you my hearty appreciation of the services which you have rendered to the Government, and to the Forest Service in particular, for so many years. Many have worked with you and many have worked under your supervision who will long remember your high standards of life and work and your unfailing kindliness in all your dealings with your associates. You may be sure that in leaving us you are carrying with you the affectionate regard of us all. Now that you are ready to lay down your daily tasks I heartily bespeak for you a full measure of years to come in which to enjoy the rest you have so richly earned."

PORT ORFORD CEDAR ON OLD TOWNSITE

By E. J. Hanzlik, D. 6

About forty years ago the mature Port Orford cedar was cut adjacent to the town of Empire, Oregon, on Coos Bay. A recent visit to this region showed an excellent even-aged stand of young Port Orford cedar 35 to 40 years old, 55 to 60 feet tall, with trees ranging from two to eight inches in diameter. This stand is practically pure cedar, only an occasional Douglas fir being found. A very unusual and striking feature of this species is the great density of the stand and the extreme darkness prevailing in the timber only a short distance from the outside edge. Considerable difficulty was had in reading a diameter tape inside the stand when there was bright sunshine overhead in the open. The recent boom in the revival (?) of activities of this old Oregon town is resulting in the slashing of a considerable area of this excellent and valuable young Port Orford cedar growth.

MANZANO LOOKOUTMAN TO HAVE READING LAMP NEXT SEASON

The fifty foot beacon tower on Cedro Peak is completed and in operation, according to the Manzano Ranger. The light can be seen at night for many miles, furnishing in and out-going planes from Albuquerque a marker through the pass at the south end of the Sandia Mountains. - District 3

MORES ET TEMPORA

A trained forester whose experience in logging camps was of the primitive conditions that years ago characterized the habitations of the lumberjack recently visited two of the largest camps on the West Coast.

"In one I went into the wanigan. Instead of a neat and tasty stock of woolen socks and chewing tobacco, I found the shelves adorned with fancy soap, face lotion, lip salve and other cosmetics. The table in the dining room was waited on by beautiful ladies dressed in the latest style.

"At the other camp, getting back with the logging superintendent a little late for the regular dinner, the cook got us up a special lunch whose piece de resistance was California head lettuce and shrimp salad with Thousand Island dressing. While we toyed with our forks - no knives being furnished - the cook sat with us, and the conversation was confined to golf. The cook was just back from two weeks' special vacation, which he spent taking lessons from a professional to perfect his iron shots." - Clipped. Washington Post.

THREE FOREST PRODUCTS TECHNICIANS ENTER INDUSTRIAL FIELD

The Forest Products Laboratory has announced the resignation of three members of its staff effective November 1. Dr. Louis C. Fleck, chemist, I. B. Lanphier, engineer, and Ervin Kurth, chemist, will leave on that date to accept positions in the industrial field.

Dr. Fleck, a Wisconsin graduate of 1917 who has been engaged in researches in the chemistry of wood for the laboratory since 1921, will engage in wood cellulose research for the Kimberly-Clark Company at Kimberly, Wisconsin. He will make his home at Appleton

I. B. Lanphier, a University of Wisconsin graduate in Civil Engineering who has been attached to the container testing laboratory since 1921, will enter the Package Research Laboratory of the 4-One Box Machine Makers at Rockaway, New Jersey.

Ervin Kurth, a graduate of the University of Wisconsin in 1927 who has been studying wood extractives, will join the Du Pont organization and will be assigned later to a plant in the East or South.

WOODEN FURNITURE 5000 YEARS OLD

Furniture 5,000 years old, made by Egyptian woodworkers long before the first pyramid was built and still in good serviceable condition, has been found by the Harvard College-Boston Art Museum scientific expedition. This ancient wooden furniture is declared by experts to be the oldest in existence in the world today. It well illustrates the marvelous durability and lasting qualities of wood. The priceless relics are now on the way to Boston, and will be placed on exhibition at the Boston Museum of Fine Arts. These things consisting of chairs, chests and beds were found in the tomb of Queen Hetepheres, mother of Cheops, builder of the first pyramid and predate by 2000 years the era of the famous King Tut, the splendors of whose tomb were told the world several years ago.—D. 3 Bulletin

CAN YOU SAVE MONEY?

If not, try this one. Every time you draw a check, enter the amount of the check plus one dollar on the stub. If you're real ambitious add 10 per cent to the amount of the check. Do not call for a bank statement too often - say once a year unless you need the canceled check to settle an argument. This scheme has been found to work better than dime savings banks, Christmas Clubs, Budget Systems, etc. - D. 7 Bulletin

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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> James Wilson, Secretary of Agriculture
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> February 1, 1905

Forest Service U S Department of Agriculture

Service Bulletin

Contents Confidential

VOL. XIII. No. 46 WASHINGTON, D. C. November 18, 1929

EPOCHAL MEETING OF NATIONAL FOREST RESERVATION COMMISSION

By L. F. Kneipp, Washington

Because of the many conflicting and urgent demands upon the time of the members of the National Forest Reservation Commission, the arrangement of a meeting is always a matter of great difficulty. The demands of Congress preclude the afternoon attendance of the two Senators and the two Representatives who are members of the Commission, while Cabinet meetings prevent the attendance of the three Secretaries during two days of each week, leaving only four forenoons within the week upon which the membership possibly can be assembled and then only subject to a myriad of other demands, absences from the city and other complications. To meet this difficulty it was necessary to arrange the last meeting of the Commission for November 2, which was considerably in advance of the date originally planned, but by a lucky circumstance all seven members of the Commission were in attendance.

The first order of business was to secure the Commission's approval of a program of purchases sufficient to obligate all of the remainder of the acquisition appropriation for the current fiscal year; to secure the Commission's approval of a number of modifications proved to be necessary by title examinations; and to have the Commission approve a number of small, but very desirable, land exchanges by which the National Forest area in the Eastern United States will be appreciably augmented and increased in value. All of this was accomplished as planned except for failure to secure the Commission's approval of initial purchases in the Flambeau and Oneida purchase areas in Wisconsin which represented comparatively small portions of the areas which must be acquired. It was the feeling of the Commission that the United States should not enter into commitments in these two new units until there is greater certainty as to the availability of future appropriations and as to the ability of the United States to acquire the necessary minimum areas on reasonable terms. In substance the meeting resulted in the approval of the following cases:

Purchase Unit	Acres	Obligation
Alabama, Ala.	3,483	$ 20,639.00
Catahoula, La.	33,916	123,583.00
Cherokee, Ga., and Tenn.	408	1,224.00
Huron, Mich.	5,096	9,807.73

Keweenaw, Mich.	3,422	7,425.77
Mackinac, Mich.	17,626	26,441.05
Marquette, Mich.	75	111.84
Moquah, Wis.	13,236	18,483.81
Ouachita, Ark.	980	2,836.00
Ozark, Ark.	2,912	12,370.35
Superior, Minn.	4,041	6,484.27

Having disposed of this Routine business, the Commission then directed its attention to a proposed new fiscal program and policy to cover the ten year period following the expiration of the Woodruff-McNary Act with the fiscal year 1931. As a preliminary step the Forester had presented to the Secretary of Agriculture, and he in turn to the other members, a memorandum definitely proposing a total acquisition program of 9,400,000 acres of land in the Eastern United States and, for the accomplishment thereof, a new bill to authorize appropriations of $5,000,000 per year for the ten year period beginning with 1932. After very detailed and extended discussion of the program it was agreed to by the Commission, thus paving the way for its presentation to Congress and opening the possibility that Congress will definitely affirm and authorize an adequate program for the completion of the Eastern National Forest units within the next eleven years.

This action by the Commission marks a new step in carrying to fruition the policies expressed by Congress in the Weeks Law and the Clarke-McNary Law, and if ratified by Congress through the enactment of the proposed new authorizing legislation it will mark a new epoch in the development of the nation's National Forest program in that part of the United States east of the 95th meridian.

TRAINING SHORT TERM MEN

By W. H. Bolles, Wyoming

Do we Rangers devote sufficient attention to the instruction, training, and encouragement of the short term men? I don't think so.

It is pretty generally agreed among present-day executives that an organization is no stronger than its personnel. Unquestionably more thought is being given this problem today than ever before, but even so, I believe we have barely started to cultivate the possibilities offered in this field. We are rather inclined to regard the development of the individual as something apart from our regular duties and, too frequently, little is accomplished. After all, isn't the ability to develop men by encouragement and instruction one of the earmarks of the successful executive?

We all realize that the short term men require some instruction. The amount given must, of necessity, be largely influenced by the press of other duties at that particular time. Too frequently, in my opinion, we attach a rather low priority to this phase of our work which results in a loss both to the Service and to the individual concerned. When these men are assigned to duties without adequate instruction the work performed is almost certain to be below the prescribed standards.

There are several ways of training and instructing new men, each of which has advantages for certain kinds of work and under certain conditions. It is doubtful, however, if any method is more successful than actually working with the men. Especially is this true for improvement work, which is particularly adaptable to demonstration. In addition to permitting first-hand instruction this method enables us to form a pretty accurate opinion regarding the foibles of each individual. It might seem that anyone with average intelligence could clear trail or perform ordinary telephone maintenance without the Ranger working with him for a few hours. He can, but in almost every instance some feature of the work will be unsatisfactory.

The Ranger who trains his telephone men by going out to the shop and showing them how to make a splice should expect poor work. He will certainly get it. This doubtless seems exaggerated but it was an actual occurrence in the not too distant past.

There is no field from which we can draw experienced short term men. We must train them. Most of these temporary employees are willing - even anxious- to learn, and any extra effort towards instruction will be reflected in the quality of their work.

HOW MUCH LIGHT DO FOREST TREES NEED?

Forest canopies intercept from 50 to 99 per cent of daylight. Since plants require light for their growth, it is essential to know whether the amount of light which penetrates the leafy canopies is sufficient for the rapid and healthy growth of the young trees that come up under the shade of the older trees.

Dr. H. L. Shirley, formerly with the Boyce-Thompson Institute and now physiologist of the Lake States Forest Experiment Station, attempted to find an answer to this question. He grew in the greenhouse of the Institute young trees and plants under a series of cloth covers of different mesh, which gave shades corresponding to those in a forest.

The experiment showed that the trees tested survive if they get only 1 per cent of normal daylight. Plants are unable, however, to make appreciable growth or to produce flowers and fruit when they get less than 8 per cent of the daylight. Plants receiving from 10 to 15 per cent of the daylight grew well, but were taller and weaker than those receiving from 30 to 50 per cent intensity. The plants which received 50 per cent of ordinary daylight usually produced as much growth or more than those growing in full daylight.

While forest canopies are seldom so dense that the young trees growing under them succumb from want of light, their growth under dense shade is usually too poor to be of much consequence. On the other hand, under very thin canopies which cut off about 50 per cent of the full daylight, the shade may prove even more advantageous than full daylight.

The results of this investigation are embodied in a paper entitled, "The Influence of Light Intensity and Light Quality upon the Growth of Plants" which appeared in the American Journal of Botany 16:354-390. May 1929. - Technical Notes, Lake States For. Exp. Sta.

MOTOR TRUCK CORPORATION URGES CARE WITH "SMOKES"

The Mack Truck Corporation has done what we believe to be a very effective piece of fire prevention work. It has sent to the members of its Safety League, which was organized by the company to create careful driving among the owners and operators of its vehicles, a letter calling their attention to an article that appeared in a recent issue of the company's magazine, as follows:

"Stop The Forest Inferno

"Discarded from a passing motor car, a smoldering cigarette lies on a highway that penetrates a virgin forest. A 'side swish' of air from a passing car whisks it into the dry grass at the side of the road. Suddenly it bursts into flame; grows sinister as, twisting with the breeze it spreads rapidly! Soon there is born a raging, devastating inferno. - **A FOREST FIRE** - against which man is but a mite.

"Acres of virgin forest laid waste; birds and beasts burned to death; perhaps even our fellowmen lose their lives in a valiant attempt to stem the conflagration. And all because a careless passenger of the highway thoughtlessly flicked a lighted cigarette out of his (or her) car.

"Such is the gruesome drama repeated many times in the 30,000 annually-recorded fires caused by carelessly discarded matches, cigarettes, or cigars. With the greater extension of highways into dense forest lands and the growing volume of motor traffic there is bound to be an increasing danger, unless definite steps are taken for prevention. It is a Herculean task for any group of men such as the United States Forest Service to cope with the situation, unless they can be assured of the unqualified cooperation of every user of the highways and every citizen interested in the future development of our natural resources.

"There must be a conscious interest on the part of every motorist to the extent that the apparently innocent 'smoke' will be recognized as a far more potential force of unhappy destruction than driving on the wrong side of the road - AND IT IS INFINITELY WORSE - when its careless user throws it unthinkingly where it can begin its destructive work.

"It has been estimated that 1700 burned or burning cigarettes are discarded every minute of every day, or a total of 90 billion annually. If but half of 1 per cent of these is tossed from the windows, cabs, or other compartments of highway vehicles, the tremendous task of discouraging this practice can be readily appreciated. Every smoker in the country has a share of responsibility in the prevention of this needless destruction. Our forests are your property just as much as is the Oriental rug in the living room and it is just as unwise to discard that burning cigarette or cigar onto the highway as it would be to drop it onto the rug and allow it to smolder and ignite. As a matter of fact the damage to the home would be inconsequential when compared to the millions of dollars annually lost through forest fires which lay waste vast areas of otherwise productive land. The operator of every large fleet of trucks or busses can exert a valuable influence and perform a worthwhile public service by taking a few minutes to impress upon each and every driver the importance of utmost care in this direction. If every driver and occupant of a motor vehicle would stop to think for a moment that the innocent 'butt' he is about to discard can be an instrument of death and destruction, there would be an instantaneous reduction in this evil. Most of us enjoy an occasional smoke while driving, but let us see to it that our pleasant smoke has no aftermath of unfortunate consequences. The manufacturer, the owner, the driver, the motorist, and the rider can and should cooperate with the Forest Service to the fullest extent.

"EDUCATION WILL RESULT IN PREVENTION ONLY IF THERE IS 100 PER CENT COOPERATION." - L. C. E.

HAWKS ALSO GET "ET UP"

By C. S. Brothers, District 1

Referring to "Nature's Balance," discussed with such gruesome detail by Charles Allen in his article in the Service Bulletin for September 30, I had the opportunity the other day, when on the Bitterroot National Forest, to observe that Nature also sees to it that the hawks do not become too numerous. They sometimes get "et up" too.

Seeing many feathers by the roadside, Mr. Malloy, the truck driver, and I stopped to investigate. We found that a very large hawk had been killed and about "half et up," apparently by a large bird, probably an eagle or an owl, as no tracks other than bird tracks could be found. The remains of the hawk were still warm. One wing, which we cut off at the second joint, measured 21 inches from that joint to the end of the spread. The second joint of the wing bone measured 7½ inches in length. Assuming that the first joint was the same length and that the back had a breadth of 3 inches, the hawk had a total spread of 60 inches. It could hardly have been less than that. Quite a formidable thing for any of Nature's balancing agents to tackle. Here must have been a battle royal compared with the swift dispatch of the rabbit by Mr. Allen's hawk. Indeed "Nature knows her onions."

STATISTICS THAT ARE DIFFERENT

By Eunice Skamser, Allegheny For. Exp. Sta.

Figures for the sake of figures intrigue some individuals, but for the most of us unless figures can be applied to some end in our lives they are just "one of those things." A recent compilation of the married, unmarried, total families, and children of District 5 may be of interest comparatively, but just a suggestion in case other Districts step up with their statistics. One item might be useful to some of us, or at least of absorbing interest. Let's have correlations of the number of unmarried men, to, the ratio of men in the District (above 21 unmarried) and the women (unmarried), the salary scale, and the age of the men: or, a comparison of urban and rural living costs; or, one of price indices for regional areas. This might explain the reason for the District office men falling down in the assumption of responsibility for their share of the great American home. It might explain later transfers to the West. It might mean a real basis of competition for the Districts!

YE EDITOR DISCOVERS

Members of the Society of American Foresters recently enjoyed the unique privilege of hearing the Secretary of the Interior explain the underlying purpose of President Hoover's recent proposal to transfer to the control of the several States the surface rights of the remaining unappropriated and unreserved public lands.

In substance Secretary Wilbur stated that the long standing and deplorable situation with reference to the unreserved public lands had not received the constructive thought and action it should have, consequently a challenge by which attention would be directed to its requirements was demanded.

Apparently the two Representatives in Congress from the State of Idaho intend to meet this challenge. On October 31 Representative Addison T. Smith introduced H. R. 4854, which would authorize the President to add to the National Forests any remaining unreserved public lands within that State chiefly valuable for watershed purposes. On November 4 Representative Burton L. French introduced House Joint Resolution No. 126, which would authorize the President to withdraw from appropriation under any of the public land laws or from grazing use any or all lands on the watersheds of reclamation projects. While these two legislative measures do not meet the entire public lands situation, they are interesting outgrowths of the President's recent pronouncement and their consideration by Congress may serve to indicate the present trend of thought and sentiment in that body with reference to the remaining unreserved public lands of the United States.

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In the San Fernando, Calif., Daily News of October 19 "J. A. C." gives the U. S. Forest Rangers an encouraging pat on the back. He says in part:

"Local nimrods who have met U. S. Forest Rangers while out pursuing the elusive buck this fall, are loud in their praise.

"'Every U. S. Forest Ranger I met this fall - and I met several - was a perfect gentleman, knew the elements of good sportsmanship and made me feel that the National Forest reserve was mine to use and protect,' declared one local man to the Daily News to-day. 'Uncle Sam's Rangers seemed glad to have hunters avail themselves of the privileges of the National Forest, wanted us to enjoy ourselves and feel at home. It goes without saying that such an attitude on the part of U. S. Rangers goes a long way toward instilling into everyone a spirit of cooperation and a desire to preserve the National Forests and take part in the work of forest fire prevention. I cannot praise them too much.'

"If it is ever necessary to bring a man to court for some infraction of forestry regulations, the U. S. Ranger's work is not completed until that man shakes hands with him and thanks him for pointing out the way.

"The U. S. Forest Ranger is on the job to protect the National Forests and make them available for the public to enjoy. He is a good man to find when you visit the National Forest areas. Ask him any questions you like. He is there for your protection and he is glad to cooperate. And every man under "Billy" Mendenhall is a gentleman."

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Mr. Herbert Evison, Executive Secretary of the National Conference on State Parks, recently has suggested to Major Stuart that he consider the possibility of a conference between representatives of the various organizations interested in outdoor recreation, wild life, preservation of natural beauty, public lands administration, etc., with a view to securing their suggestions and recommendations in relation to the proper development and use of the National Forests for purposes of outdoor recreation. Major Stuart has advised Mr. Evison that the idea appeals to him and will receive his further consideration, but that since the special Mt. Hood committee has the question of advisory relationships under consideration, he would prefer to await receipt of the committee's findings and recommendations before proceeding further along the line proposed by Mr. Evison.

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Raphael Zon's "Forests and Water in the Light of Scientific Investigation" is being translated into Spanish. The Mexico Forestal for August, 1929, quotes as an initial instalment the first nine pages of this bulletin.

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G. H. Lentz, forest extension professor and forestry camp director of the New York State College of Forestry, will join the Forest Service December 1 as silviculturist at the Southern Forest Experiment Station. He will be assigned to a study of erosion in its bearing on flood control. Mr. Lentz is a member of the 1917 class of the Yale School of Forestry. He became a teacher in the ranger school of the New York State College of Forestry in 1921 and has been a member of the faculty at Syracuse since 1923.

JOHN A. THAYER

By R. F. Taylor, District 8

On the morning of October 19 the Forest Service launch "Weepoose" arrived in Juneau with the body of John A. Thayer, Junior Forester, bringing the tragic news of his death as the result of an encounter with a brown bear on October 16.

Jack and one assistant, Fred Herring, had been cruising pulptimber all summer, and with the "Weepoose" as tender, were working the southeastern part of Admiralty Island when the tragedy occurred. The two men were in brushy country some two and a half miles from the beach, early in the afternoon, when an immense Alaskan brown bear, disturbed from his bed, reared up not fifteen feet distant. Herring, unarmed, ran for a tree as Thayer fired. There was time for but one shot, which it is believed took effect, but the infuriated beast was not stopped. But a few minutes elapsed before the bear left and Herring, dumfounded at the turn of events, hurried to Jack's aid.

First aid appliances were rushed from the "Weepoose" and everything possible was done to save Thayer's life, but his wounds were too severe and at about ten that evening he died.

The passing of Jack Thayer is a shock to his hosts of friends both in the States and in Alaska. A strong, rugged, friendly fellow was Jack, with a keen mind and a love for his work.

Thayer entered the Forest Service as Assistant Ranger on the Santiam in 1921. He had had two years at the Oregon Agricultural College and was an ex-service man, having served in the Navy during the war. In January, 1923, he transferred to Alaska and took over the Craig Ranger District on the Tongass. He was keenly ambitious to continue his college work, however, and during the winter of 1924-25, took the Ranger's short course at the University of Montana. The following fall he resigned to complete his work for a degree at the forest school of Oregon Agricultural College. That he was a keen student is attested by the fact that he passed the Junior Forester examination in the spring of 1927 with a grade that placed him second on the eligible list.

Returning at once to his beloved Alaska he served on the Chugach and Tongass Forests as Junior Forester with the operative title of Forest Examiner. Lending his profession to the development of a new country, his was a pioneer's death. Here in Alaska one of the best liked and most popular of "our gang" has passed. As a trained forester, a skilled technician, and a friend his place cannot be filled.

SUPPORTS FORESTRY WARMLY

The Thirty-eighth Annual Convention of the Order of Hoo Hoo, at Amarillo, Texas, September 25-27, elected a lumberman of that city and resident of the Southwestern District as Snark (President) for the coming year. Its resolutions commended the work of the Forest Service and instructed its directors for the next twelve months to push the work of the "Friends of the Forest," represented by a committee in each club, which engages in measures for the advancement of forestry, particularly reforestation and fire prevention; also the continuation of American Forest Week, in which this committee desires to participate.

A. C. Dixon, Eugene, Oregon, lumberman, and one of the directors, proposed cooperation with the National Lumber Manufacturers Association whereby the latter would furnish six experts in the characteristics and uses of woods to speak to public meetings under the auspices of every Hoo Hoo Club in the United States and Canada; and the convention, to give this the greatest effectiveness, proposed the organization of a club in every town having two or more lumbermen. The idea is to popularize the use of wood, and since this can not indefinitely be obtained without wise use, protection, and perpetuation of its source, the forest, such a campaign should stimulate the widespread application of forestry; and should prompt all to know and love, and consequently protect, the forest from its arch enemy, fire. - District 3

MR. EVERARD RESIGNS

Lewis C. Everard has resigned from the Forest Service to become Editor for the American Association of Museums. Mr. Everard first joined the Forest Service in 1915, coming to the position of Editor from that of instructor in English at Yale University. He became Chief Editor of the Department of Agriculture in 1919, later engaged in economic, statistical, and editorial work for the War Finance Corporation, and early in 1925 returned to the Forest Service. In his new position Mr. Everard will have charge of the editing, distribution, and sale of all the publications of the Association, including the periodical "The Museum News."

In addition to important administrative work and unusually competent editing of many publications, Everard has directed many Forest Service educational activities, has contributed notably to American Forest Week, and as Editor of the "Forest Worker" has done much to build up the high standards of that publication.

Everard will be keenly missed, both officially and personally, from the ranks of the Washington office. - W. S.

MORE INDIAN FIRE!

By E. N. Munns, Washington

In 1811, Captain Samuel Levering "an intelligent and skillful officer" was sent by the Governor of Missouri to the Governor of Illinois asking for the delivery of certain Indians wanted for murder. Governor Edwards of Illinois wrote a message to the Indian tribes and commissioned Levering to call a council, which he did. The chiefs of a number of tribes assembled about 20 miles from Peoria and on August 11 Captain Levering read the Governor's message to the Indians, chiefly Potawatamies. The following day Gomo, the Indian chief, replied, his remarks being written down at the time by a member of Levering's party. The relationships of the Indians and the whites were duly set forth in this recital, but we here are interested solely in the following remarks:

"Last fall, on the other side (of the Illinois River), and not far from Fort Wayne, a Wyandot Indian set fire to the prairie. A settler came out and asked him how he came to set fire. The Indian answered that he was out hunting. The settler struck the Indian and continued to beat him till they were parted, when another settler shot the Indian."

In his account of the passage from Lake Michigan down the St. Joseph and across the portage into the Illinois in "A New Discovery of a Vast Country in America," written in 1698, Father Louis Hennepin writes: "Having passed through great marshes, we found a vast Plain, on which nothing grows but only some herbs, which were dry at that time (about December 10, 1679), and burnt, because the Miamis set them on fire every year, in their hunting wild bulls (buffalo), as I shall mention anon.

"When the savages discover a great number of these beasts together, they likewise assemble their whole tribe to encompass the bulls, and then set on fire the dry herbs about them, except in some places, which they leave free; and therein lay themselves in ambuscade. The bulls seeing the flames about them, except in some places, run away through those passages where they see no fire; and these fall into the hands of the savages, who by these means will kill sometimes above sixscore in a day."

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
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VOL. XIII No. 47 WASHINGTON, D. C. NOV. 25, 1929

THE QUESTION MARK OF THE JOB

By Roy Headley, Washington

Of the 23,000,000 visitors to the National Forests, a considerable proportion get their information about the Forests and impression of the Forest Service from Forest Guards and short-term employees. What our Guards say to visitors is important, not only because such contacts are often our best chance to prevent man-caused fires, but also because they are often our best chance to inform and interest a large proportion of our fellow citizens. Something ought to be done about it. All of which is no news. But here is some news right from the question line.

The Sierra Forest gets over 290,000 visitors a year and District Ranger Frank Sweeley of the Pineridge District gets more than his share of this number. Sometimes he wonders whether he is running the district or the visitors are running him and his men. Moreover, Frank had a growing conviction that the answers to questions of visitors were not always what they might be and that the contact between Guards and visitors represented a big opportunity which was only being partly utilized.

Finding that he was unable to move the machinery of the overhead offices, Frank started in to do something on his own hook. Out of his own experience and from discussions with his men he formulated a list of questions and sat down to write correct answers which would have just the right public relation touch. It may sound easy but it is not. I am glad I do not have to stand an examination on my ability to give offhand just the right answer to all the questions which visitors ask. Frank found he had a bear by the tail but he didn't let go. When he got done he had 74 questions and 40 mimeographed, single spaced pages.

One interesting thing is the "reaction" of Forest officers to whom I showed the pamphlet this summer. If they once started to read it, I learned that they would pay no attention to me until after they finished.

Samples of the questions are as follows:

The Forest Service:

1. What is the tradition of the Forest Service?
2. What is a National Forest and how is it financed?
3. Why were the National Forests created?
4. How many National Forests in the U.S. and in California?

5. What is the Forest Service?
6. Who is the Boss?
7. How can I join the Forest Service?
8. What does a Forest Officer do?

The Forest Service and the Community:

9. As a citizen what is required of me when I visit the Forest?
10. What is the difference between a National Forest and a National Park?
11. Is the Forest Service a business for profit?
12. What does the Sierra Forest do for the San Joaquin Valley?
13. Is a National Forest all Government land?
14. What is the State law requiring fire protection on privately owned Forest land?
15. Does the Forest Service pay taxes?

Timber:

16. Big logging companies tear up young trees, why can't I have one?
17. Can I transplant a forest tree in the valley; and when is the best time to plant?
18. If timber is so scarce why are Xmas trees cut?.
19. Why does the Forest Service sell these trees?
20. Why doesn't the Forest Service stop destructive logging?
21. Why don't the Rangers thin the crowded trees?
22. How can I tell a sugar pine?
23. What makes that tree look red?
24. Can't the bugs be killed?
25. What are the life processes of a tree?
26. Is Forest land good agricultural land?
27. What good is brush land?

28 Where can I get some timber for my use?

29. Is the Government planting any trees?
30. Does the Forest Service carry on experiments?

The Fire Problem:

55. Can you make arrests?
56. Campers cause most of the fires don't they?
57. How do fires start?
58. Where can I smoke?
59. Who detects Forest fires?
60. Why aren't the lookouts on the highest peaks?
61. What contributes to the spread of a fire?
62. Does the Forest Service have airplane patrols?

63 Why doesn't the Forest Service burn off all the inflammable material at the proper time of the year?

64. Can fire really destroy the fertility of the soil?
65. On brush land doesn't fire improve the grazing?

Schwarzenborn, a tiny city in Hesse, could just now celebrate its 600th anniversary, but prefers to let the event pass without formal celebrations. But it enjoys one almost unique distinction. Its finances are in such good condition that no municipal taxes are assessed.

This is due to the revenue from extensive forests presented to the town in 1552 by Philip the Generous. Moreover, every family in the city, which numbers but 850 citizens is entitled to receive one cartload of firewood free yearly. - Clipped.

SAW TIMBER EXHAUSTION?

By E. E. Carter, Washington

The Census issued, on September 30, preliminary figures on the production of lumber, lath, and shingles in the calendar year 1928. The total cut of lumber was 34,142,123 M feet, 1.1 per cent less than in 1927. Over a third of this total was cut in the States of Washington (7,305,277 M) and Oregon (4,371,924 M), with the former's cut practically stationary and the latter's output increasing by 9.5 per cent compared with 1927. No other State had a cut approaching the figures for either of these leaders.

It may be of interest, however, to note how the outputs in other Western States compared with those in Atlantic Seaboard States which are supposed to have exhausted their forest resources.

Eastern		Western	
North Carolina	1,020,893 M		
Florida	995,072 M	Idaho	977,463 M
Georgia	1,039,475 M		
Alabama	1,980,082 M	California	1,952,659 M
Virginia	547,706 M	Montana	337,879 M
Pennsylvania	233,615 M		
New Hampshire	239,261 M	Arizona	158,047 M
Maine	266,523 M	New Mexico	162,030 M
Maryland	59,729 M	South Dakota	53,967 M
Delaware	13,161 M	Utah	7,623 M
Massachusetts	112,299 M	Colorado	72,257 M
Connecticut	35,356 M	Wyoming	24,402 M

LIVES LOST DURING 1929 FIRE SEASON

Forest Service Employees

1. Joe Aiken.

Killed on August 31, 1929, on the Smith Creek Fire, Pend Oreille National Forest.

The employee was engaged in carrying water to men on the fire line, and while stopping on the line to give three men a drink, a falling tree struck him. His skull was crushed, and death resulted within one and one-half hours.

2. Archie White,

Killed September 1, 1929, Bald Mountain Fire, Selway National Forest.

Employee ran to avoid being struck by a green tree which had burned off at the base. He failed to reach safety, however, and was struck on the head by a second tree which was knocked down by the one he was trying to avoid. His skull was shattered and death resulted immediately.

3. Lester Rudd,

Killed probably on August 30, 1929, Sullivan Creek Fire, Flathead National Forest.

During the severe blow-up of this fire, this employee, with others, was being led to safety by a Forest officer. He disappeared from the crew, however, and his body was found on September 22 on a sand bar in the South Fork of the Flathead River. The condition of the body at the time that it was found did not indicate whether death was due to suffocation or drowning, although it was determined that he had not been burned to death.

4. **Tom Gorman,**

Drowned August 29, 1929, Horse Creek Fire, Bitterroot National Forest.

This employee was found at the bottom of a pool which was formed by a beaver dam. Evidently, he had removed his clothing and entered the pool to swim or bathe. The coroner was unable to determine whether the employee had been seized with cramps, or whether his heart had failed on account of his entering the cold water. He had been on patrol of the fire line, and was alone at the time of his death.

5. **Norman K. Deem, Forest Guard.**

Killed September 17, 1929, on the Lower Sisar Canyon fire, Santa Barbara National Forest.

Employee was riding a motorcycle and presumably had been to the head of the fire and was returning to the main camp with news. The fire was burning on both sides of the road and the smoke was dense and blinding. A Government Ford truck was slowly creeping up the road when the motorcycle appeared out of the heavy smoke about twenty feet from the truck. The employee had his head down to protect his eyes from the smoke. The motorcycle and truck met in a head-on collision and the employee was thrown against the windshield and on over the truck for a distance of about thirty feet. He was rushed to the hospital in Ventura but died the next day.

6. **Richard Gell,**

Died on August 25, on the Fisher Gulch Fire, Trinity National Forest.

Gell left the fire camp on August 25 in a crew of six men. The original leader of the crew was relieved during the day and his successor upon return to camp counted his men and found but five. A few moments later a sixth man checked into camp. The crew leader thought this was his other man. Later on he learned that the man belonged to another crew. A searching party was sent out and Gell's body was found on the morning of August 26. He had been watching a piece of line along a ditch. The supposition is that some burning material rolled down over the line, ignited below him and made a run up the hill. The tracks indicated that he started to run along the back of the ditch and that he stumbled and fell into the fire.

7. **Douglas C. Ingram,**

Suffocated and burned August 13 in the Camas Creek Fire, Chelan National Forest.

Ingram was acting as traveling firecamp organizer on the Camas Creek Fire. On August 13 he visited a crew working on the fire and deciding that the danger was too great on that sector took the responsibility for calling them off the line. In taking this action Ingram undoubtedly saved the lives of this crew because the fire later "blew up" in that section. Ingram sent the crew back to camp while he and a temporary employee, Ernani St. Luise, walked a short distance down the ridge to get a better idea of what the fire was doing. No one knows exactly what happened then but the two men did not return to camp and an immediate search was started. Their bodies were found about two and one-half miles from the point where they were last seen alive, about two weeks later. The fire evidently made a quicker jump than was anticipated and the two men were cut off by a fire both above and below them, and in their attempt to work eastward around the fire and back to camp they were caught and suffocated before the flames actually touched them.

8. **Ernani St. Luise,**

Suffocated and burned August 13, Camas Creek Fire, Chelan National Forest.

See preceding paragraph.

9. **J. F. Marten,**

Died on August 23, 1929, Camas Creek Fire, Chelan National Forest.

This man died suddenly on August 23. An autopsy indicated that death was due to heart failure.

10. William P. Makeiff,

Killed August 15, 1929, on the Dollar Mountain Fire Colville National Forest. This man a doukabor from Canada, was killed by a falling snag.

11. Fred E. Gibson,

Killed on August 31, 1929, on the Breitenbush Lake Fire, Mt. Hood National Forest. This man was killed by a falling snag.

12. Franz Frank,

Died August 6, 1929, Cougar Creek Fire, Rainier National Forest.

This man was injured by a falling rock and died in the ambulance on the way to Seattle.

13. Robert Keys,

Killed on April 7, 1929, Laureldale Fire, Unaka National Forest.

A crew of fifteen men were working on this fire under the direction of Forest Guard Lethcoe. The fire was partially controlled when a sudden gust of wind from the east followed by a whirlwind caused the fire to "blow up." The Forest Guard called to his men and began to herd them out, paying most attention to four sixteen year old water boys in the crew. Keys, and another man, Richard Cornett, started to run but a sheet of flame cut them off. The bodies of the two men were found at 11:30 p.m. some distance north of the point where they were last seen alive.

14. Richard Cornett,

Killed on April 7, 1929, Laureldale Fire, Unaka National Forest.

See preceding paragraph:

15. Sam Swanson,

Missing since September 17, 1929, Nezperce National Forest.

Mr. Swanson was subject to spells of melancholia and his health was poor. A short time prior to his employment on the Nezperce Forest he had been released from a Spokane hospital. When Swanson's absence was noticed a thorough search of the country was made but no traces of him were found. Forest officers who investigated this case believe that Mr. Swanson committed suicide by jumping into the Salmon River.

16. Paul Croxton,

Missing since August 30, 1929, from the Sullivan Lake Fire, Flathead National Forest.

Croxton disappeared from the crew at the time the blow up on this fire was in progress and nothing further has been heard from him. Search has been made throughout the territory in which he was seen and inquiry has been made of relatives. His body has not been found and no word has been received from him since August 30.

Men not on Forest Service payroll at time of death

1. Wm. A. Doelle, hardware dealer of Cashmere, Washington. Was for years a key man for the Forest Service at Cashmere, and performed like service for the State after the area around Cashmere was taken over by the State under cooperative agreement. As deputy state warden, he had charge of one side of a fire in Yaxon Canyon, south of Cashmere, on July 2, and was burned to death when the fire made a quick run.

2. David Koontz, farmer and lessee or manager of the orchard tract in Yaxon Canyon where the fire of July 2 started. He was with Mr. Doelle and suffered the same fate.

3. Phillip Roe, rancher living in Dole Valley in Eastern Clark County, Washington. Burned in his home September 16. A large fire in State territory ran several miles before a strong southeast wind and reached Mr. Roe's ranch during the night while the occupants of the house were asleep. Wm. Roe carried his mother to safety, but there was not time to save his father, who was an old man and did not succeed in making his way out of the burning house.

studies of more efficient production and utilization of the forage resources of the semi-desert ranges, of which the Jornada is typical. Stops were made outside the Reserve by a big arroyo on depleted and eroding range and again on level but seriously depleted grama range, in order to give the members of the party an opportunity to compare ranges far below their productive capacity with the good range conditions on the Jornada. Four stops were made within the Range Reserve: one on the summer range type, for a discussion of seasonal use; a second on range grazed yearlong, for a discussion of proper degree of utilization and grazing capacity; a third at the Reserve headquarters, for a discussion of range feed as a factor in economic livestock production and of range water development; and a fourth on deferred range in the bull pasture, for a discussion on the value of deferred grazing and reserve pastures. As the trip progressed, more and more interest was shown in the results obtained and the possibilities of rehabilitating and maintaining ranges and the main adjustments necessary to assure sustained production of feed, to meet drought, and to afford satisfactory economic production.

Mr. Chapline closed the program on the Jornada with a brief summary statement on the application of the main range management principles as demonstrated on the Jornada to range conditions throughout the West. There is little question but what everyone in attendance recognized the importance of grass in range livestock production and in maintaining a satisfactory watershed protective cover on semi-desert ranges.

Mr. W. H. Waggoner, the cooperator at the Jornada, barbecued a fat yearling and the New Mexico Agricultural College joined with him in furnishing the rest of the lunch, which was served at the headquarters of the Reserve. In the afternoon the group stopped at the College ranch, saw some excellently developed cows which were once Jornada calves, and listened to a discussion of the experimental supplemental feeding work of the college. - W. R. C.

BEHRE APPOINTED DIRECTOR OF NORTHEASTERN FOREST EXPERIMENT STATION

C. Edward Behre has been appointed as Director of the Northeastern Forest Experiment Station, succeeding John S. Boyce, now Professor of Forest Pathology at Yale University.

Mr. Behre is a graduate of the Yale Forest School and has had experience in the Forest Service in the Southwest. After his military service in the War he became Associate Professor of Forestry at the University of Idaho where he served for five years. In 1923 he became a member of the Northeastern Forest Experiment Station, leaving two years ago to undertake consulting forestry work in New England. Mr. Behre is widely known among professional foresters for his publications on growth. He is Secretary-Treasurer of the Yale Forest School Alumni Association and Editor and Manager of the Yale Forest School News.

Mr. Behre's appointment to this place will permit Mr. Marinus Westveld, Silviculturist at the Station, to devote his time again to investigative work which was interrupted by the resignation of Dr. Boyce.

REFLECTIONS ANENT THE UMPQUA NATIONAL FOREST

By Major Lawrence Mott-Signal Corps-ORC-USA, US DEPUTY GAME WARDEN

My very good friend, Ranger Fred Asam, has asked me to set down some thoughts on the Umpqua National Forest, and it is a very real pleasure to do so!

From the time that I killed my first moose in New Brunswick at the age of 12 years, up until the present day, it hath been my good fortune to travel rather well all over the world, after big game of all kinds, and in the gathering of material wherewith to write. So it is that I have visited a vast number of strangely beautiful places, from the exotic and colorful splendors of the tropic jungles - to the forbiddingly lonely, yet majestic, wildernesses of the territory within the Arctic Circle. Naturally....I have been to several of our own National Parks. Last summer I spent several weeks in the Yosemite, and had a right royal time, thanks to the most generous courtesies of the Director of Parks, at Washington, and to the personal attentions of the Chief Ranger and his Staff, in the Yosemite, itself.

But this summer is the first time that I have been able to make physical connections with one of our National Forests, and to say that I have been highly interested and vastly pleased at the things that I have seen, is putting it mildly!

It is a pity that the American people, as a whole, do not know - more intimately - of the splendid work that is being done by the Forest Service, in all of the Forests of the country! I am writing a series of articles for one of the national weekly publications and it will be my earnest intent to familiarize my fellow countrymen with that which is being done to preserve their common property! Much has been written of the Parks. Nil - of the Forests! Yet to my mind, the latter are more important - from the strictly conservationist viewpoint - than are the former!

Vast areas of trees....are our National Forests! And, as the charming song hath it..."Only God can make a tree!" Faithfully keeping watch and ward over their silent proteges, is a small army of loyal men, and I have been deeply impressed by the calibre - mental and physical - of these Forest wardens Silent men, for the most part, taking their duties closely to their hearts, the Rangers, and all the others, of a Forest's Staff, typify to me a rare type of manhood! Self-reliant, on tiptoes for any emergency, kindly-natured and genial-souled, the Forest Service, is, as I have said, a little army of which the public knows less than nothing. It is high time that they should know more.

If all the Forests are as well managed and operated as is the Umpqua there is nothing left that could be desired - or that might be necessary! Forest Superintendent Carl B. Neal is that uncommon type of an Executive who can swing his mind from a comprehensive and complete grasp of the whole of large territory under his command - to such a matter as a half pound of nails for some fire lookout station, afar on a solitary peak - and do it instantly! And it is from Mr. Neal that I have gleaned my first knowledge of the "workings" of a Forest! Through his kindness I have seen a good deal of his territory, and expect to see a lot more of it, next summer. District Ranger Asam, too, has been courtesy personified. Messrs. Meacham and Hargis, the personnel of the Steamboat Ranger Station on the North Umpqua river, have gone out of their way to thoroughly ground me in the 'whys and wherefores" of many things - so that I feel much more intimate, now, with one of the greatest Services that the Public has!

It is going to be a GREAT pleasure to come back again, the Lord willin', in '30! It might be added that I have had most splendid sport with the great Steelhead trout, of this river! I have fished the Rogue, and other streams, for these magnificent fighters, but..hereafter it is "me for the North Umpqua" when July rolls 'round!

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. • • • Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 48 WASHINGTON, D. C. DECEMBER 2, 1929

PURCHASES AND PROFITS

By L. F. Kneipp, Washington

It is now a matter of history that after purchasing the Waterville Tract in the White Mountain National Forest at a cost of $998,000 the Forest Service turned around and sold the vendors of the land a part of the timber thereon at prices which will yield within $4,000 of the total amount paid for the property. This sale is exclusive of the timber upon 774 acres which is to be maintained in a virgin condition and of a tremendous volume of thrifty young growth which will constitute the basis of further cuts as time goes on.

District Forester Kircher examined the timber cutting operations on the Waterville Tract this past summer and found conditions so generally satisfactory that he could not help writing a rather commendatory memorandum which emphasized the financial as well as the silvicultural features of the operation. His comments were so interesting that Major Stuart communicated them to the seven members of the National Forest Reservation Commission in order that they might know that the earlier prophecies as to the outcome of this rather unusual purchase had been realized in full measure.

In response to Major Stuart's letter the Secretary of the Interior, Dr. Wilbur, wrote a reply which has several interesting phases. It is as follows:

"Dear Mr. Stuart

"My congratulations upon your letter of October 4. It represents just the kind of result which interests me most. To get back into old New England and mature there methods for the preservation and the re-creation of the forests, is very satisfying. I doubt whether such a good financial showing can be made in many other instances. I trust though that the decisions as to what should be done in the way of additional purchases for National Forests will not drift into an investigation where we will have to think in terms of immediate money income.

"I note particularly your comments in regard to burning. The destruction of soil-building material has always made me feel that if some other device to control fire could be thought out, it would be much better. I will be interested in any further reports on this area.

"With congratulations,

Very sincerely yours

RAY LYMAN WILBUR"

District 7 is now planning to dispel Secretary Wilbur's doubt as to whether such a good financial showing can be made in many other instances. There are of course no other cases involving so large a purchase price, or area of land, or sale of timber, but allowing smaller proportions there are bound to be numerous other instances where the relative financial advantage is even greater than in the Waterville case. The modesty of some Forest Supervisors has deterred them from recording in the Washington office the exact figures in these cases, but from time to time members of the District office or the Forester's office have learned in the field of instances in which very gratifying returns have been secured from purchased lands.

Records are, however, available of a couple of interesting cases on the Allegheny Forest in Pennsylvania. In one instance 9,668 acres were approved for purchase at $5 per acre. From one tract of about 200 acres which formed a part of this purchase approximately $10,000 worth of timber has already been sold and the land from which this timber was cut has been left in good reproductive condition. In another instance 41,747 acres were purchased at $5.25 per acre. From one small part of this purchase, amounting in area to about 200 acres, timber with an estimated value of $18,886 is now being sold.

These cases are not the results of financial wizardry or high pressure salesmanship on the part of Forest officers but merely examples of conservative judgment in appraisal and purchase. In many cases the vendors of purchased land have removed from such land only the species or kinds of timber required for their needs or suited to their particular operations, leaving on the lands a considerable volume of other species which they were not prepared to handle under their methods, or for which they had no market. Since this timber was obviously of no value to the vendor, no value, or only a nominal value, was allowed for it in the appraisal. But when the property came under the control of the Forest Service and was made subject to Forest Service timber sale procedure, other operators found it practicable to remove such remaining timber at stumpage prices of considerable extent. Frequently, too, a much larger volume of timber proved to be marketable than was estimated when the appraisal was made.

It is well known that when it comes to trading either cows or cordwood "Reverend" Bishop of the Allegheny has almost unchallenged supremacy. Nevertheless, it is almost certain that other Supervisors of Weeks Law National Forests can record instances of timber sale receipts from purchased lands which will compare favorably with those above mentioned, and since Secretary Wilbur's letter is something of a challenge it is hoped that these other directors of National Forest destinies will stifle their modest tendencies and make the facts available.

EVENT OF THE HOUR IN CONSERVATION

President Hoover's Commission on Conservation and Administration of the Public Domain To Hold First Meeting

(From a news release by the Department of the Interior)

James R. Garfield, Chairman of President Hoover's Commission on Conservation and Administration of the Public Domain, has issued, through Secretary Wilbur, a call for the first meeting of that body, to convene at the Department of the Interior on November 23.

Coincident with the issuance of that call the first full list of the members of the commission is given out. There are 21 people on it as follows:

James R. Garfield, Chairman, Cleveland, Ohio; Elwood Mead, Washington, D. C.; I. M. Brandjord, Helena, Montana; R. K. Tiffany, Olympia, Washington; Rudolph Kuchler, Luhrs

Building, Phoenix, Arizona; Charles J. Moynihan, Montrose, Colorado; George W. Malone, Carson City, Nevada; William Peterson, Logan, Utah; I. H. Nash, Boise, Idaho; Perry Jenkins, Big Piney, Wyoming; E. C. Van Petten, Ontario, Oregon; Wallace Townsend, Little Rock, Arkansas; H. O. Bursum, Socorro, New Mexico; George Horace Lorimer, Curtis Publishing Company, Philadelphia, Pennsylvania; James P. Goodrich, Winchester, Indiana; Gardner Cowles, Des Moines, Iowa; Huntley Spaulding, Rochester, New Hampshire; Col. W. B. Greeley, Seattle, Washington; Mary Roberts Rinehart, Washington, D. C. The Secretary of the Interior and the Secretary of Agriculture will be ex-officio members of the commission. The Chairmen of the House and Senate committees on public lands and agriculture will be asked to attend the meetings.

The commission for the present will operate upon the basis of voluntary service. It is anticipated, however, that early legislation in the new Congress will provide it with funds and congressional authority.

The creation of this commission has grown out of the desire on the part of the administration to determine as best it can the proper policy, under conditions of to-day for handling the public domain. Secretary Wilbur started the discussion when, before a conference of Western Governors at Boise, Idaho, last July, he suggested that it might be wise to turn the public lands over to the States. He emphasized the fact that the most vital need of the West was water and that the first consideration was such protection of watersheds as to produce the maximum of stream flow. He thought that the Western States were water conscious and might handle their watersheds to better advantage than had the Federal Government.

President Hoover, in a letter to another meeting of Western Governors held at Salt Lake City, Utah, on August 21, agreed with this position and maintained that the restoration of the grazing potentialities of these lands was of first importance. Rainfall, he pointed out, ran quickly off of lands bare from over-grazing, causing erosion and floods, and went to waste. Unregulated grazing had greatly injured the range from both the standpoint of grass produced and of water yielded. No return from these lands had been received by the Federal Government. The President held that the Federal Government is less able properly to administer matters so far from Washington than are State agencies that are close to them. He believes also that better Government results when such problems are handled locally.

The area covered by these public lands is about equal to that of the State of Texas. A study of it made 20 years ago by a public land commission appointed by President Roosevelt made specific recommendations to the effect that grazing on it should be controlled to the end that the range be restored and come to serve a better purpose. No action, however, has been taken by a distant Federal Government which seems to have been given ample opportunity to act. The President will ask the commission he has appointed to counsel him as to the advisability of turning these lands over to the States.

In the matter of irrigated lands also conditions are not the same as they were 27 years ago when the Reclamation Bureau was created. At that time most of the lands in the West that were capable of irrigation were public lands. It was thought that it was the proper province of the Federal Government to store the water, establish the ditches, aid the settlers, supervise the transfer of ownership of the land from the Government to the individual. Now practically all land capable of irrigation has passed into private ownership. The Government's position seems to be simplified. Possibly its proper function is merely to store the water and leave it to the States and local communities to develop the ditches and attend to the detail of the distribution of the land.

The President and the Secretary of the Interior believe that the situation in the West has greatly changed since the earlier governmental studies of the problems were made and that the whole situation should be reconsidered from the viewpoint of the present.

They believe that further development of the West is largely dependent on one item--water. The first consideration in handling the public domain should be to increase its value as a watershed. That accomplished it becomes the purpose of reclamation to store the water that it be not wasted. The Commission on Conservation and Administration of the Public Domain will be asked to aid in writing a new conservation policy that fits new conditions.

PICTURE RECORDS

By Howard R. Flint, D. 1.

I have read with much interest F. H. Eyre's item, "Before and After Taking," in the Service Bulletin for July 22. Without question photographs can afford a remarkable historic record of the progress or succession of vegetative cover. No verbal account of it could be as striking and convincing as W. W. White's photographic "Story of a Timber Cutting." The Forest Service needs more of this kind of stories.

One of my hopes and expectations in this phase of forest work is that it will be undertaken systematically and will eventually lead to properly indexed and referenced large-scale photographs of every foot of the National Forests. Sounds like a large order, but this is the day of large tasks quickly done by modern machinery and organization.

During the last three years it has been my good fortune to photograph from about ten thousand feet directly above them some four hundred and seventy-five square miles of rugged mountain forest in District 1. The pictures were taken from an airplane traveling at an average speed of about eighty-five miles per hour. In the plane there was mounted a Fairchild aerial camera, a marvelous instrument which, under the conditions mentioned above, can be made to deliver clear, sharp photographs on a scale of about six inches to the mile, of the country beneath.

Vertical aerial photographs depict the forest as it was on the instant the exposure was made. They show in fairly accurate relative proportions every park, meadow, old burn, stand of timber, brush or young growth, and, in open stands, every individual tree on the area included in the picture. They show roads, houses, fields, orchards, fences, ditches, streams, cliffs, ponds, and some of the forest trails; placed under a very simple stereoscope they show relief beautifully and in great detail.

Would not such a set of pictures properly catalogued and indexed have rare value in the administration of a forest unit? Think of what it might be worth to a Forest administrative officer to be able to pick from his files a print which would show him just how a given section appeared ten, fifty, or one hundred and fifty years ago.

In addition to their value as photographs, such pictures can be compiled into a remarkably detailed and complete drainage, culture, and cover-type map of the entire area they depict. It was for this purpose that the pictures were taken in D-1 and the results secured thus far have been very encouraging although many difficulties due to photographic distortion are encountered in compiling the map.

Two skilled men with equipment that is now no longer ultra-modern can do fifty square miles in a photographic flying day, even if the job lies one hundred miles from camp. At current rates for flying, the cost of their day's work including photograph material will be about two hundred and sixty dollars. At the rate above mentioned, which is needlessly slow, District 1 could be photographed in about seven hundred and forty photographic flying days. It is rather difficult, trying work but is entirely feasible. Some day it will be done as a matter of course.

WANTED: AN IDEA HOW TO DO IT BETTER

The Division of Forest Insects of the Bureau of Entomology has been making experiments which involve the diffusion of liquids through the sapwood of insect-infested trees. They have tried several methods, of which that described below is the most effective. Boring shallow holes close together and plugging each was tried and discarded. The essential point is to have the outer rings of the wood cut and to have the liquid in contact with both sides of this cut until a sufficient quantity to do the work has been absorbed. For a medium-sized tree, say 15 inches d.b.h., this sufficient quantity is about two quarts. The technique used so far is as follows:

(1) Smoothing the bark, usually down to the inner spongy layers

(2) Cutting a narrow notch (3/16" - 1/4") around the tree with a sharp saw or knife and deep enough to make an incision through at least the outer 2 - 4 annual rings

(3) Boring a hole into the cut with a 1/2" bit to facilitate insertion of copper pipe mentioned later

(4) A piece of old inner tubing about 2" wide is then stretched around the notch, preferably placed so as to lap over the bored holes and held in position by a wire tourniquet above and below the saw cut

(5) A 2-quart container with 6" - 8" of rubber tubing attached is then hung just above the bandage

(6) A piece of small gauge copper pipe 3" long on the end of the tubing is pushed through the bandage into the hole thereby allowing the fluid in the jar to run around the tree and be absorbed

With this technique the solution is absorbed by the tree in a few hours, penetrating thoroughly all the outer annual layers of wood to the very top of the tree. It must be applied, however, before blue stain develops as this clogs the tracheids and prevents the ascent of the solution. With the southern pine beetle there is about two weeks' interval after attack when good results can be obtained. But with some of the western species a month or two months' leeway should be possible. It is absolutely necessary that practically the entire circumference of the outer rings come in contact with the injected material.

Obviously this technique is cumbersome and not practical for large-scale control operations.

Dr. Craighead is asking for suggestions for applying a water-tight connection around the tree with less effort and by a means which will work better on trees which are flat-sided or irregular in cross-section 3 or 4 feet above the ground. Can anyone in the Forest Service help him out?

YE EDITOR DISCOVERS

The first Florida forest fair was held at Lake City on November 13, 14, and 15 under the auspices of the Florida Forest Service and the Chambers of Commerce of Lake City and Columbia County. More than 4,000 men, women, and children are reported to have visited the exhibits. An important feature was a field trip made each day and attended by 75 or 100, most of whom were naval store operators and land owners. They were shown a firebreak demonstration by tractors, and at the McColskey turpentine still near Lake City some new methods in handling gum were demonstrated and a State demonstration plantation of slash pine on his place adjacent to the main highway was inspected. The group also inspected the fire tower operated by the Florida Forest Service as a part of the State's protective system in cooperation with timber land owners. Each protective unit of approximately 100,000 acres is equipped with a lookout tower. Two experimental areas at Starke were visited where the Southern Forest Experiment Station is experimenting with different methods of turpentine practice. An area was visited where Dr. Austin Cary demonstrated to the group thinning in young overstocked slash pine. The trees were cut and the method and results explained by Dr. Cary on the ground.

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Forest officers on the Fremont National Forest have become so concerned about the erosion menace on that Forest that they have undertaken, in addition to their regular work, the construction of different types of check dams to determine the best means of stopping the destruction of important meadows through gullying and of restoring them to their original condition. The erosion problem has increased alarmingly on this Forest during the last few years - many large wet meadows having been converted into dry sagebrush flats within the memory of residents now living there. Log and brush dams of various types have been built across drainages at frequent intervals and at varying distances from the head of the flats. The work is on a larger scale, perhaps, than has been undertaken on any other National Forest and it is expected that within a few years the outcome of these experiments will determine the best technique to use in erosion control under the local soil and runoff conditions.

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District Forester Kelley is in Washington with a convincing lot of data to present to the Agricultural Sub-Committee of the House Committee on Appropriations, at the request of Chairman Dickinson of that committee. Mr. Kelley plans to show them what the fire control situation is in the West and what is needed to bring it up to a proper basis. He will present particularly the needs of Districts 1, 4, 5, and 6. He will also present data indicating the situation with regard to Clarke-McNary Law protection work, forest insect and blister rust control, and recreational activities.

Chairman Dickinson of the House Sub-Committee was one of the four members of Congress who toured the western Districts with the Forester last summer to study the work of the Forest Service.

THE TURNING POINT

By Howard Hopkins, Chippewa

Everyone admits that the Forest Service has made great strides in its field; has built up a capable organization which has passed through a time of expansion and experimental development with the greatest of credit. Yet when we look back briefly and summarize the work accomplished in our three main jobs of fire prevention, suppression, and forest management, we see as follows:

In the fire game we still struggle for sufficient funds until the fire is under way, when money is then expended like water until the fire is out. As soon as the fire is out one's appeal for equipment to help prevent future fires is met with the laconic "Sorry - no funds."

In forest management we point with pride to our income from timber sales, to the removal of the overmature timber and the leaving of a thrifty stand. That which is done has been by and large well done, but are we as foresters content to make only salvage cuttings - the cutting that a layman could ordinarily mark and not be far off? At once one points to the Christmas tree sales on the Pike National Forest or a thinning made on the Nameless National Forest, but how pitiful are such isolated examples which serve only to bring out the absence of any general progress in such lines.

Brushing excuses or explanations aside, let us see how we stack up at present. We have splendid fire fighting crews - and good timber salvage cutters. Are we content to remain so and move forward perfecting our ability to put out fires and cut out mature and overmature timber, while merely hoping and trusting that someday we may get funds for improving and advancing? We have probably all had the experience of seeing a stand of young timber stagnate for a ten to twenty and sometimes thirty year period when an expense of a dollar or so an acre would save ten to twenty years' time and be a financial investment of the highest order. We have all seen a young stand of pine under brush or some other worthless overstory, where it was evident that the pine would stagnate for ten or more years until finally breaking through after many losses, and have realized that a small expenditure would liberate the pine and save ten or more years' time in rotation with great benefit for fuller stocking. How many times have we explained to an interested tourist that we knew this to be the case but unfortunately no money was available for any work of that nature and other pressing work did not permit the regular force to do it. And as the tourist murmurs his regret and indignation no doubt through his mind runs the thought, "Well, if the Forest Service can't do this vital work let's leave them to fight fire and cut out old timber and get someone in who can manage the acres to secure maximum use and returns."

In the Lake States the Government is now buying close to three million acres of land which are ready for the most intensive practice of forest management as well as fully adequate fire prevention. We are buying in an area where people speak in terms of 40 acre tracts, where the Forest Service members as yet have a reputation as foresters. We are taking up a problem that obligates ourselves to be foresters or fall short in the minds of the public.

In short the recent expansion in District 9 has now brought the turning point in the Forest Service history. Are we to continue along the old lines, or are we to accept our higher responsibility, acknowledge that our period of experience has enabled us to go forward into intensive forestry - which means the handling of every acre from a forest management standpoint with such jobs as thinnings and liberation cuttings made at the time needed and not only when they can pay for themselves. It means also to handle the fire job from a prevention rather than suppression standpoint. Or are we to continue as salvage cutters and fire fighters waiting for the public to become forestry minded while the public in its turn will be saying, "If this is all the Forest Service can do, let us turn the job over to some one else who can see, accept and act on its responsibilities to the full?"

Foresters should accept the problems in the Lake States as the opening wedge - it is the opportunity for the forestry profession as a whole. We must now prove to Congress and the American public that we must have funds to develop and properly handle the Lake States forest problems. Unless we concentrate on that and by pushing together secure the needed funds now we will fall back with tremendous loss to the Forest Service and the forestry profession in this country.

FLYERS ASKED TO KEEP ON LOOKOUT FOR INSECT INFESTATIONS

"In recent copies of the Service Bulletin I noticed several references to the use of airplanes for transportation of men for fire fighting purposes. As we are always on the lookout for getting something for nothing, it occurred to me that it might be worth while to suggest to all Forest Service men that on such trips a lookout be kept for patches of dying timber indicating insect infestations. For instance, recently some men flying from District 3 passed over the Kaibab. There would have been an excellent opportunity here to observe and report on any groups of dying timber." - Dr. F. C. Craighead, Bureau of Entomology

A GLIMPSE OF NATURE'S DRAMA

So interesting are the stories which nature gives us that for the benefit of our readers we are copying two little scenes as observed by Harold Russell, Park Ranger and Professor Angus M. Woodbury, Park Naturalist, as recorded in Zion and Bryce Canyon Nature Notes for August of this year. Mr. Russell writes in his topic, "King Snake Eats a Rattle Snake":

"For a long time we have been led to believe that the Boyle king snake (Lampropeltis getulus boylii) preyed upon rattlesnakes (Crotalus oreganus) but it was on July sixth that we first obtained the definite evidence. It was on that date that a small rattlesnake was dropped into the cage where three small king snakes were kept.

"The king snakes which appeared to be sleeping immediately sensed the presence of a stranger and one of them became alert and active. The rattler coiled up in the corner of the cage apparently much frightened while the king snake approached and took a stand directly in front, bracing itself against the screen wire on the side of the cage and forming a U a few inches back of the head. Cautiously it moved nearer the prey until within striking distance when it suddenly straightened out its U and grabbed the rattler by the snout, thus holding its mouth shut. The rattler squirmed and twisted but all to no avail. Placing one part of its body over the rattler the king snake pulled on its head and stretched the victim out until you would think the bones would pull apart. This had a quieting effect on the prey and the captor began slowly but surely to swallow the other, head foremost as most snakes do when devouring their prey." -- The PIED PIPER of Utah, in D. 4 Bulletin

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture
>
> February 1, 1905

Service Bulletin

Contents Confidential

VOL. XIII No. 49 WASHINGTON, D. C. DECEMBER 9, 1929

HOW MUCH WATER DOES THE MOUNTAIN BRUSH FIELDS USE?

By W. C. Lowdermilk, California For. Exp. Sta.

In answer to the question of how much water mountain brush fields use, no detailed results can be given at this time for the problem has not been studied systematically. The California Forest Experiment Station is beginning this year a definite attack on this particular problem. A number of instruments are being installed this fall for this purpose. It will require two years before we shall be willing to accept indications. The study must of course run for at least five years, and preferably ten.

The following analysis of the problem is offered, however, to indicate not only specific questions which the study is expected to answer, but also to show how the problem appears to us at this time. Experimentation will doubtless open up new points of attack.

The brush vegetation or chaparral forests on the mountains must be considered as two kinds; namely, slope vegetation and canyon bottom or stream-side vegetation. This distinction is very important because the two types of vegetation have at their disposal different quantities of water. The slopes are drained; the canyon bottoms where streams are flowing have water tables near the surface. The vegetation on the slopes gets no water after the last rain in the spring; the stream-side vegetation is irrigated all through the summer.

The amount of water available to the two types of vegetation is very different. The slope vegetation has at its disposal only an amount equal to the field capacity of the mountain soils less the amount of moisture at the wilting point. The mountain slope soils are generally thin and coarse in texture. The field capacity of such soils is therefore small in comparison with the heavier valley soils.

It is impossible to wet soils above their field capacity when they are drained. It is possible that slope soils quickly drain the gravity water to depths beyond the major root zones leaving the field capacity as the entire source of moisture for the brush vegetation throughout the summer. We do not yet know how much this is, but it should be determined experimentally for each particular region. This is an important determination to make.

The vegetation in the canyon bottoms consisting of willows, alders, sycamores, grape vines and the like may be called summer growing, for it has water at its disposal during the entire or most of the summer and is actively using water throughout this period. Evidence of this may be found after fires when small springs issue from willow and alder flats where the fire has killed the tree growth.

It would seem, therefore, improbable that the slope vegetation is consuming the same amount of water as the streamside vegetation. Quantitative determinations are required of the relative amounts used by these two types of vegetation. The streamside vegetation covers a very small fraction of the area covered by the slope vegetation. It does not seem probable that the destruction of the brush vegetation could be expected to yield large quantities of water as a result of reduced transpiration.

And again, it is plain that vegetation sprouts up and comes in the next season on the burns, usually, however, not until very active erosion has taken place during the rainy season. In the following spring any vegetation, such as weeds and grass, will continue to grow until the available field capacity water of the soil has been consumed. Since it is impossible to keep some kind of vegetation off the mountain slopes, it is difficult at present without further study to see how much of the water of field capacity supply can be held over to the next rainy season.

This is the analysis of the problem as it appears under conditions of uniform rain conditions. Since there are not adequate rain and snow stations in the mountains to determine how patchy, how intense, or how much rain or snow falls, it is impossible to conclude that variations in the flow of streams are due entirely to the presence or absence of full grown brush or chaparral. In fact, this question can not be settled until a systematic study is made of the following points:

1. Total catch of rain in a watershed - (Two small watersheds would serve best for the preliminary experiment).
2. Total run-off in the stream.
3. Difference between rain in inches depth and run-off in inches depth. This value would represent the evaporation opportunity of the watershed, which would include both evaporation and transpiration.
4. Interception of rain by vegetation by litter and by soils of varying depths.
5. Actual transpiration of chaparral or brush vegetation under the conditions on the slopes.
6. Effect of vegetation in control of superficial run-off and erosion.

The water problem is too critical to act on guesses. Any change in treatment of the watersheds should be based on established facts for the particular region in question.

A VIGNETTE OF THE PAST

By Bertha E. Adams

I am not going to write you the conventional letter of thanks for your kind expressions of regard and esteem and the material gifts you showered on me on the occasion of my leaving you as an ctive worker, but in lieu of what I hoped to say in your presence in response to Mr. Anderson's kind remarks, but which welling emotion prevented me from saying, I am going to indulge in somewhat of reminiscence in regard to my official career, since I believe "reminiscing" is the privilege of those who have passed to the ranks of the "Oldest Inhabitants."

Thirty-nine years sounds like a very long time, but in reality it is very short. Stenographers were considered a rarity in the Government clerical service when I was appointed in the General Land Office on November 18, 1890. On March 3, 1891, the act of Congress authorizing the creation of Forest Reserves from suitable lands then remaining in public ownership became a law and administration under it was placed in the General Land Office. From the first I was one of the clerks designated to assist in the work, so that I may say that my entire service for the Government has been connected with the cause of forestry. The things connected with my Land Office service of which I am most proud is the preparation on the typewriter of proclamations creating Forest Reserves for the signature of the following named Presidents: Benjamin Harrison, Grover Cleveland, William McKinley, and Theodore Roosevelt. Another outstanding memory in connection with it, between March 3, 1891 and February 5, 1905, when the work was transferred to the Forest Service, was the inspiration given us by Prof. Filibert Roth, who guided us for a time. I shall never forget his magnificent character.

It was most natural that I should wish to follow to the Forest Service the work upon which I had been engaged so long. The twenty or more, of the office force, who were transferred have gone their various ways, until, today, I believe I am correct in saying that only four are yet on "this side," namely, Mrs. Totten, Miss Payton, Mr. Enoch, Mr. R. H. Charlton, and myself. Mr. E. T. Allen came also, but is engaged in the cause outside the Service.

On the morning of February 1, 1905, we assembled in Room 702 or 703, and Mr. Anderson made us a little speech in which he told us of the high standards of the Forest Service. Right here I want to say that then and there I felt discouraged about being able to "fill the bill." However, there was nothing left to do but to do the best possible.

Now, just a few words about some of the field force transferred to the Forest Service, namely, Mr. E. A. Sherman, Mr. L. A. Barrett, and Mr. L. F. Kneipp, still with us, and no doubt many others whose names I do not now recall. Mr. Charles H. Shinn, now passed beyond, was also transferred. There never was a greater friend of forestry than Mr. Shinn, although his methods were short of the standards now required. The spirits of Mr. Shinn and John Muir must enjoy wonderful communion now.

At last the lapse of time has brought me to the end of my service with you, and I cannot close without expressing my surprise and unbounded thanks for your expressions of regard and esteem in the form of your gifts. But, the LIST OF NAMES - WELL OVER ONE HUNDRED, shall ever be a prized possession. Another thought comes to me that I must not fail to express, namely, that I shall ever be reminded that my freedom from daily duty here is made possible only by the drafts regularly made from all your salaries, which alone will compel me to remember you.

I shall never lose my interest in the cause of forestry, and as I make new contacts in my goings and comings I shall never miss an opportunity to speak words that may cause some unthinking ones to do everything in their power to conserve our forests, especially in regard to using caution with fire. And, perchance, after all, in doing this I may be able to make my major contribution to the cause.

Now, as to some of my hopes: at last, when the spirit takes its flight, my fondest wish is that this mortal may be consigned to Mother Earth - not in a sealed casket, but rather in a winding sheet - in order that LIFE may the sooner begin again in the form of some beautiful tree for coming generations to enjoy.

Again I thank you, one and all.

AN EARLY FUEL WOOD DEMAND

By E. N. Munns, Washington

We, who live in the present age of electrically-operated interurban lines, fast overland trains using coal and oil, and rapid land and water gas-propelled vehicles, are apt to overlook the fact that at one time wood was the transportation fuel preeminent. In the early development of the Mississippi valley region, travel by Calistoga wagons was a tedious affair, twenty miles constituting a long day's ride over roads which would today be classed either as "impassable" or as "detours." The invention of the steamboat and the discovery that steamboats were practicable on the Ohio River stimulated and speeded up markedly the great western migration and settlement of the "wilderness." Further than that, the introduction of the steamboat upon western waters perhaps contributed more than any other one cause to the early prosperity of the Middle West.

How rapidly this steamboat phase of our transportation development came about can be gathered from the fact that apparently not more than 5 or 6 boats were built prior to 1815 whereas some 250 steamers were in operation on the Ohio and Mississippi Rivers in 1835. Probably an equal number of boats had been built and destroyed in this 20-year period, as the life of these early vessels seldom was over 3 or 4 years. Travel in these steamers was heavy, and some boats more than paid for themselves on their first trip. The development of this travel is seen in the records of the Louisville Canal. In 1831, 406 steamboats of only 76,323 tons total passed through the Louisville locks in contrast to the 1501 boats, totalling 242,374 tons, paying tolls there in 1836.

The fuel consumed was approximately one cord of wood for every 12 tons of boat on each full day of operation. Boats ran only about 8 months out of the 12 either because of ice or low water. About one-fourth of the running time was spent in ports of call or in tie-ups for repairs. Thus they functioned on full running time only about six months, or 180 days. In 1835, the 250 boats, an aggregate of something over 40,000 tons, required in excess of 525,000 cords of wood. Coal was not used extensively until about 1850 though during the '40's an increasing quantity was used in combination with wood when it was readily available.

The price of wood varied from $1.50 to $5.00 a cord, with the probable average in excess of $2.50 a cord: hence the total annual fuel bill was about $1,400,000, a sizable item. The cost of the fuel was estimated to amount to about one-third of the total annual operating charge for a steamboat.

To furnish the wood for this steam traffic, wood yards were established at many points along the river, many farmers establishing yards where they disposed of the forest growth that prior to this navigation development had been looked upon as a deterrent to farming. Many towns, some of which still exist, were built up from the nucleus of a wood yard.

All tree species were used for fuel, but beech particularly was prized, as was ash, the latter because the wood burns readily when green. Hickory was not favored because of the large amount of ashes and residue it left in the boilers and because the sparks from this wood were supposed to start the fires that destroyed many boats. Oak, sugar maple, and elm were the species which, with beech, made up the bulk of this fuel wood. Then, as now, the light-weight woods, such as the willows and poplars, were not desired though they were undoubtedly slipped into the boats when the loading was done at night and when good, readily accessible to the river banks and good landings, became scarce. Indeed, just before the advent of coal grates, the fear was voiced that there would be a shortage of fuel which was allayed by enterprising individuals who loaded barges with cordwood. These barges descended the smaller streams during the flood period and so replenished the depleted yards along the main rivers.

Many stories are current as to the forced landing of boats in order to fill the fuel deck, the crew often having to cut wood as well as to load it. During such emergencies the passengers often helped. In one advertisement of 1826, passengers who would aid in collecting fuel were to receive a material reduction in their fare.

MORE WILDERNESS

By Roy Boothe, Inyo

During the past two years or so a number of pilots and embryo commercial airline outfits have been investigating the possibilities of developing a passenger carrying service to the recreational areas on the Inyo National Forest. While no regular schedule or service has been developed to date, the "handwriting on the wall" points to a steady increase in demand from the public for the development of this new phase of airways accessibility.

Only one permit for development of an airport has been granted by the Inyo Forest but we have two other locations where a number of landings have been made each year, bringing hunters and fishermen nearer by several hours to the fields of these increasingly popular sports.

In one instance a plane took off from its home port in southern California early one morning, landed at Monache Meadow where by previous arrangement a packer was waiting to pack the two hunter passengers in a few miles to where they could get some deer hunting. They were particularly fortunate and each bagged a buck, and were returned by the packer to the plane in time to return to their homes that evening, - a trip of over 400 miles.

This year, in July, a six-passenger plane brought five sportsmen from Oakland to Templeton Meadow where saddle stock awaited to carry them to Golden Trout Creek some six or eight miles from Templeton. This is the native habitat of the Golden Trout (Salmo roosevelti), and while this most beautiful member of the trout family does not attain such large size as when transplanted to lakes or streams with greater food resources, it is still quite numerous at Golden Trout Creek and takes a fly ravenously. Within a few hours these men each had their limit, rode back to the plane via saddle horse and then home via airplane in time to eat their trout for dinner after a full but no more strenuous day than many of us have every day in our chosen line of endeavor.

Perhaps twenty-five or thirty hunters traveled by airplane to hunt deer in the Mt. Whitney District during the past season. The cost of this mode of travel, compared to auto or train and pack-train is undoubtedly in favor of the airplane when all factors are considered, including the saving of time, and so, as the public develops its sense of air mindedness we may expect the rapid development and expansion of airplane travel to our recreation areas, particularly those remote from large centers of population and good automobile roads.

With the type of planes now in use it will be difficult to find locations suitable for landing fields in the National Forests but probably in the not very distant future planes will be developed which may land with comparative safety in much more hazardous fields than it is now possible to use.

What effect this mode of travel may eventually have in the destiny of our game aimals and fish, perhaps no one can anticipate with much accuracy at this time, but if the advent of the automobile may be taken as an example it will certainly be important and far reaching, and students of fish and game conservation can well devote some time and energy in planning to meet the new situation when it arrives. - From D. 5 Bulletin

YE EDITOR DISCOVERS

In 1912, 87 per cent of the permittees grazing under 2500 sheep per permit grazed 56 per cent of the total sheep on the Forests. In 1928, 92 per cent of the permittees grazed 56 per cent of the sheep.

In 1912, 93 per cent of the cattle permittees grazing under 200 grazed 50 per cent of all the cattle, and in 1928 the same percentage of permittees grazed 53 per cent of the cattle.

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The Christmas Tree will be very much on the air during the festive season this year. Radio talks on proper methods of cutting and on other phases of the Christmas Tree problem are being included in the "Farm Flash" series, "Housekeepers' Chats," and the "Farm Calendar" of the NBC network. H. N. Wheeler also is scheduled for a five minute oration on Christmas Trees over the network on the day before Christmas.

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Mr. Barnes sends us the following "Description of the Province of West Jersey in America," dated London, 1677. It covers the western side of New Jersey along the Delaware River.

"The trees of the country for the most part are large Oak, Chestnut, Mullberry, Ash, Elm, Firr, etc., with a multitude of wild vines twisting about them and upon the mast wild turkeys, pigeons and other land fowl do feed which makes the venison, pork, turkeys and fowl extraordinarily fat and good. The lumber and wood is the greatest incumbrance of this country which may be sufficiently destroyed in time with vast advantage."

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The demand for the little multigraphed pamphlet "Forestry News - What It Is and How To Write It," by C. E. Randall of the Branch of Public Relations, so far exceeded expectations that the first run was speedily exhausted. A new printing has now been completed and a generous supply is on hand. Requests for copies which had to be held up are now being filled, and additional requests from the field can now be taken care of.

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"We Have The Men" by Erle Kauffman, formerly of the Forest Service and now with the American Forestry Association, appeared in the December issue of "Outdoor America" as a lifely discussion of the problem of fire control. Sitting in a puddle of water while a forest fire rages round about, several of Mr. Kauffman's characters in the story engage in a philosophical discussion of why fires burn and how they can be stopped. The conclusion is that we have the men, but lack the wherewithal for effctive fire control.

McGOWAN'S MAMMOTH MINSTRELS FEATURE OF WASHINGTON OFFICE PARTY

By C. F. Hunn, Washington

A new-old form of entertainment was offered this year for the diversion of the members of the Forest Service family in Washington at their annual fall party, November 27. Through the unremitting efforts of Claude M. Ballard, a long-cherished idea of putting on a colored minstrel show was given tangible form. The result was a great success, if the enthusiastic comment of those present is to be believed. Hard-working interlocutor Daniel F. McGowan and a sextet of brunet end-men (to say far less than one would like to say for "Mandy") were obviously successful in avoiding the dangerous situation feared by "Bones," when he declared that "it ain't right for de audience to sleep wid de winders shut." Memories of Primrose and Dockstadter and "Haverley's Mastodan Minstrels" were aroused--albeit not too rudely. Rounding out the half-circle was the Forest Service chorus, in pseudo-plantation costume, under the invisible but effective baton of Director Theodore W. Norcross. Mrs. Norcross supported their several numbers at the piano. The chorus has never received more spontaneous applause than followed their rendition of familiar and well-loved "spirituals" and plantation melodies.

Several of the numbers in the program were contributed by "outside talent," although it is doubtful if one should refer so distantly to the greatly enjoyed solo by Mrs. Perkins Coville or the tap-dancing of our own "gone but not forgotten" "Doc" Everard. Two members of Mr. Everard's gymnasic team, Messrs. Arthur Bracey and "Pat" Patterson assisted him in a manner greatly appreciated by the audience. The Fred Morrells are among the newer members of our Washington office family, and it was, therefore, an especial pleasure to have an opportunity to hear two of them--young Rowe Morrell, accompanied by his sister Mary in the "Kashimiri Love Song." Bud Bryant, young Ted Norcross's partner, chipped in an extra number in "Li'l 'Liza Jane," with support from the chorus. Meanwhile, behind the scenes, prompter and librettist Harry Irion was rounding out his generous contribution to the success of the event. While all who contributed have expressed themselves as well repaid by the good fun that their labors produced, the brunt of the work fell upon the committee who had the affair in charge, and all agree that it is upon Messrs. Ballard, Irion, and McGowan that the brunt of the credit should fall. The only mischance their efforts experienced was in the sudden illness of Salvatore Lo Jacono, who until the last moment was cast for "Garibaldi." His own concern over his greatly regretted absence should be somewhat relieved by the creditable manner in which his substitute, Perkins Coville, took up the role at the last minute and carried it through. The program in full is as follows:

Opening Chorus
    "Gentlemen (and ladies) be seated!"
Bones - C. H. Rachford
Song - "Steal Away" - Forest Service Chorus.
Amos - H. N. Wheeler
Tap Dance - L. C. Everard and Arthur Bracey.
Song - "Kashimiri Love Song" - Rowe Morrell, assisted by Miss Mary Morrell, at the piano.
Mandy - "Ebenezer" - H. N. Wheeler
Andy - J. C. Dort
Tap Dance -Arthur Bracey and "Pat" Patterson
Song - "Massa Dear" - Forest Service Chorus.
Garibaldi - Perkins Coville.
Song - "Sing, brother, sing!" Perkins Coville and chorus.
Song - "Witness" - T. W. Norcross, assisted by Ted Norcross and Bud Bryant
Song -:Li'l 'Liza Jane" - Bud Bryant and chorus.
Tambo - W. A. Dayton
Song - "Song of the Open" - Mrs. Perkins Coville, assisted by Mrs. W. O. Rawls at the piano.
Rufus - W. R. Chapline
Closing Chorus - "Carry Me Back to Ole Virginy."

NEW INFECTION AREAS IN PENNSYLVANIA

Mr. L. W. Hodgkins in letter of August 15 writes:

"We found blister rust in the Allegheny National Forest yesterday; one location being quite near 'Hearts Content.' I found one specimen (on pine) at Rams-Horn Spring (Identified by the Office of Forest Pathology as infected with blister rust.) This was within a few hundred feet of the large trees. The next nearest find was about one and a half miles away. We found it in three locations; two of them being widely separated. The cankers ranged from 1925 to 1927.

"Forest Ranger Stone was with us, also District Forester R. R. Houpt." Both Stone and Houpt found the blister rust though they had never seen it before. "Houpt found it on Ribes before it was located on pines by me a few minutes later. The location at Henry's Mills is on an elevation just above a nice stand of white pines, which are about half matured, with some large trees scattered throughout the stand. Ribes are abundant here."

On September 7, Mr. Hodgkins writes concerning the infection near the Mont Alto Forest:

"Found a good bit of blister rust on pine and Ribes in the southern end of the Forest, approximately five miles from the Pennsylvania-Maryland State line in what is known as 'Bieseckers Gap.' As far as I know, it is on both State and private lands. I cannot say at this time how far it is scattered, but we found it along the trail for about a quarter of a mile, and about the same width. Conditions indicate that it extends much further than that east of the run. The heavy infection on Ribes seems to indicate a more serious and older infection than we saw. Ribes rotundifolium were abundant there and east of the brook the infection seemed quite general. There is plenty of moisture in the gap to make conditions ideal for the spread of the disease." - From Blister Rust News, October 1929

WILL SOMEONE ANSWER HIM?

The editor observes in the October 28 issue of the Bulletin that the Florida forests yield more income than all her citrus fruits plus her canning and preserving industries and theroupon concludes that the ability to get money to fight forest fires is in inverse proportion to the extent of the forests and the amount of income derived from them. This would be interesting if true. But it cannot be true, because there is an abysmal difference between the two kinds of income involved. Either the forest income must be converted to a sustained annual per acre basis or the income from the citrus orchards must be converted to a full rotation basis. And even that would not result in a real parity. Perhaps a better test would be to compare the average per acre selling value of the citrus industry and of the forest industry, each on a going concern or annual growth basis exclusive of the existing stocks of products on hand. It is safe to conclude that on either of these bases the ability to get money for forest protection and other forest work shall be found to be in direct proportion to the nth. power of their capacity to produce a sure enough income. - L. S. M.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. . . . Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson Secretary of Agriculture
>
> February 1 1905

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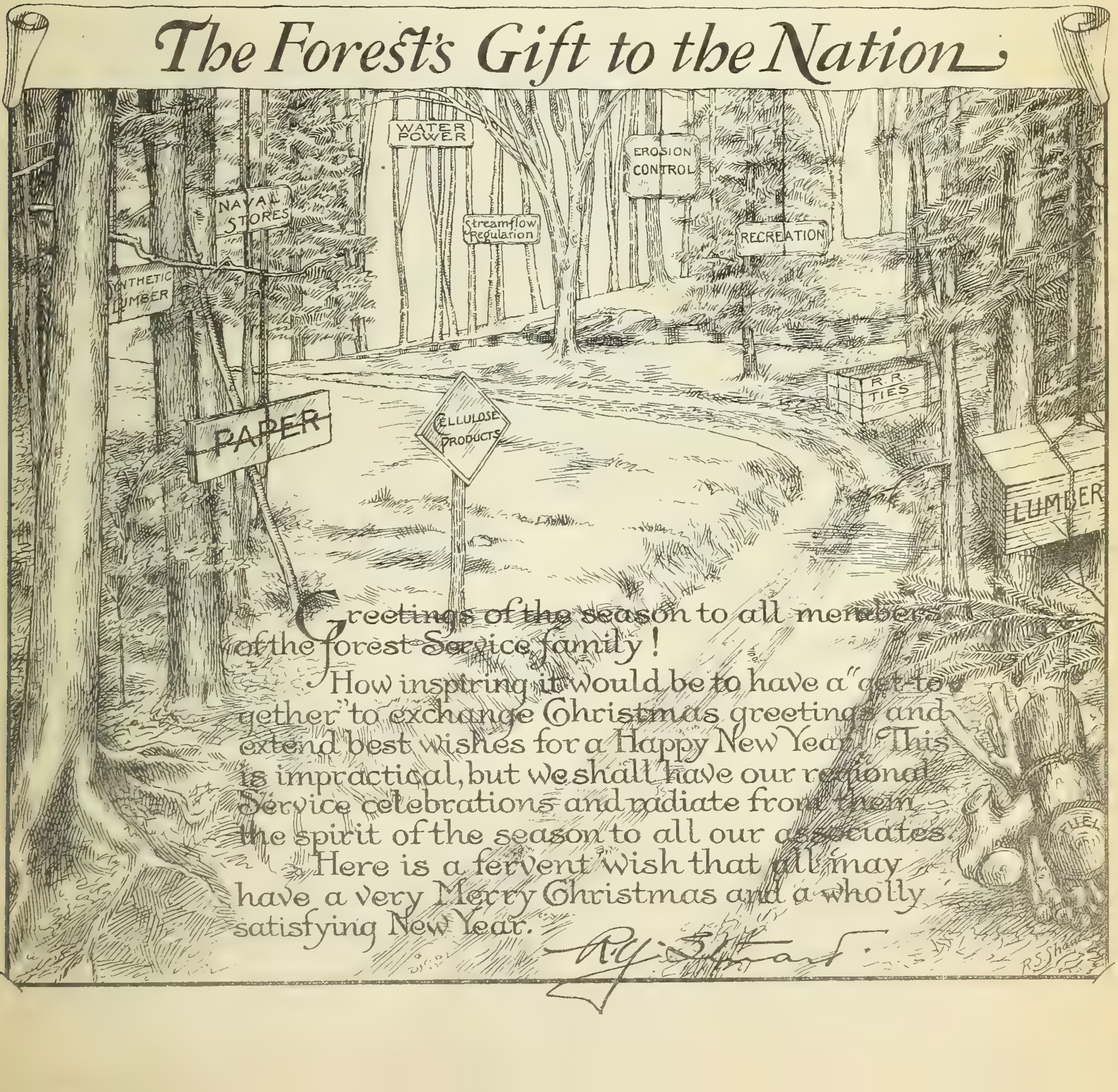
The Forest's Gift to the Nation



WATER POWER
EROSION CONTROL
NAVAL STORES
Streamflow Regulation
RECREATION
YNTHETIC LUMBER
PAPER
CELLULOSE PRODUCTS
R.R. TIES
LUMBER
FUEL

Greetings of the season to all members of the Forest Service family!

How inspiring it would be to have a "get-together" to exchange Christmas greetings and extend best wishes for a Happy New Year. This is impractical, but we shall have our regional Service celebrations and radiate from them the spirit of the season to all our associates.

Here is a fervent wish that all may have a very Merry Christmas and a wholly satisfying New Year.

R. Y. Stuart

FIRE CONTROL, CONGRESS, AND THE WASHINGTON SECTION OF THE SOCIETY OF AMERICAN FORESTERS

By Roy Headley, Washington

While in District 1 last summer, Chairman Dickinson of the Agricultural Subcommittee of the House Committee on Appropriations remarked that he wished District Forester Kelley could tell the story of fire control to the Subcommittee in Washington. The Forester "followed up." As a result nearly two hours of the one day hearing of the Forest Service before the Subcommittee was occupied by Mr. Kelley's presentation. The District Forester came to Washington with a bale of graphs and highly colored maps, all designed to carry the fire control message through the eye and deepen any impressions made through the ear. The Forester had previously arranged for cooperation between Districts 1, 6, 5, and 4 in the preparation of material to present to the Committee and a vast amount of hard work had been done by all concerned in order that the presentation might be as effective as possible.

The Subcommittee, because of their trip last summer through the western Districts, had a considerable personal knowledge of the problems of the western National Forests and were ready to listen with active and responsive minds to the carefully prepared presentation made to them. Although the remainder of the hearing was put through with unprecedented speed, there was never at any time during Mr. Kelley's presentation any expression of impatience or desire to hurry up. Numerous comments and questions were interjected with the design of making the printed record show more clearly the force of the numerous points made by the District Forester. Seasoned observers of congressional hearings feel confident that the Forest Service will hold all the increases previously allowed by the Bureau of the Budget. Unquestionably also the trip of the Subcommittee, followed as it was by Mr Kelley's presentation, will exert an important influence on the mind of the Committee in future years as further increases are sought for fire control in accordance with the financial plan of the Service.

Unfortunately, no members of Congress other than the members of the Appropriation Subcommittee were present at the hearing. In order to get the graphic material and Mr. Kelley's oral presentation before a larger audience a meeting of the Washington Section of the Society of American Foresters was called at the Cosmos Club on the evening of December 3. In addition to a goodly turn-out of foresters there were present a number of Congressmen and Federal officers, including Colton of Utah, second man on the Roads Committee and Chairman of the Lands Committee, Addison T. Smith of Idaho, Clarke of New York, Leavitt of Montana, Englebright of California, Dr. Summers of Washington, and Admiral Rosseau, Chief Coordinator and his assistant, Captain Rodgers.

Mr. Kelley's presentation began with the appalling destruction by forest fires in Districts 1, 6, and 5, in recent years and went on into a treatment of hour control as one measure of the speed required for effective fire control. Hour control, as it applies in various regions, was explained and was shown to depend on roads and trails, detection, communication, shelters, personnel, and transportation for men and equipment. Each one of these elements entering into speed and safe hour control was then presented in different ways by means of graphs and maps depicting to the eye the essential conditions in these western Districts.

Mr. Kelley then asked and answered the question "What has the Forest Service done with all the money which Congress has been appropriating from year to year?" Numerous graphs and charts showed that in most, but not all, regions as appropriations have gone up suppression costs and losses have come down. One particularly convincing chart showed the accumulative investment in roads and trails in relation to the reduction of Class C fires.

Mr. Kelley's presentation also included charts and some discussion on insect control, blister rust, and at the society meeting the road construction program was dealt with under several heads using maps and charts prepared by Mr. Norcross. Any discussion of Federal aid roads, 7 per cent systems, forest highways, community roads, and protection roads very rapidly gets into complications and deep water. This particular discussion, however, brought out some very promising prospects for the future.

Representative Addison T. Smith of Idaho remarked that the story Mr. Kelley had told should be presented on the floor of the House of Representatives. Dr. Summers of Washington, who had listened for two hours as a member of the Agricultural Subcommittee, came also to hear the same story told to the Society of American Foresters. Dr. Summers remarked that he intended to make a speech and we surmise that he may deliver in the House the speech which Representative Smith said should be made there.

It is understood that the District Forester considers his labors last summer a sort of a rest cure compared to the hectic period he spent in Washington.

INCREASES ALLOWED BY THE BUREAU OF THE BUDGET, FISCAL YEAR 1931

Appropriations and Projects	Increase
Protection and Administration of National Forests	
Prevention of forest fires	$ 188,500
Commercial timber sales	20,500
Control and extermination of tree destroying insects and tree diseases	
Insects	25,000
Tree diseases	25,000
Regulation of use of grazing lands	3,000
Administration of new units	20,000
Sanitation and fire prevention	7,000
Planting, National Forests	15,000
Reconnaissance	
Timber surveys	7,500
Grazing reconnaissance	4,950
Improvements, National Forests	
Protection improvements	306,000
Protection roads and trails	1,500,000
Protection improvements in four Southern California Forests	25,000
Range improvements	15,000
Administration improvements	9,000
Research in Forest Management	
Southern Forest Experiment Station	20,000
California " "	30,000
Intermountain " "	10,000
Range Investigations	18,000
Forest Products	50,000
Forest Survey	85,000
Forest Economics	25,000
Forest Fire Cooperation	300,000
Cooperative Distribution of Forest Planting Stock	10,000

Changes in Language.

1. Limitation on cost of buildings has been raised to $2500.
2. Limitation on cost of maintaining herd of long-horn cattle on Wichita Forest has been raised from $500 to $1000.

EVENTS OF THE HOUR IN CONSERVATION

President Hoover's Commission on Conservation and Administration of the Public Domain Gets Under Way

According to the United States Daily of November 26 Mr. Garfield, Chairman of President Hoover's Commission on Conservation and Administration of the Public Domain advised the commission at its first meeting on November 23 that among the problems requiring its attention the following were important:

The possible repeal or amendment of the Federal Power Act.

The possible repeal or amendment of the present code of homestead laws, and especially the elimination of the present soldiers' preferences which are believed undesirable since they result in placing upon lands a class of men poorly adapted to realize on the agricultural values.

The question of whether the unreserved and unappropriated public lands should be granted to the respective States in which situated.

The question as to whether sub-soil rights to such lands should be granted to the States.

Desirability of consolidation of control of the public lands.

Community grazing problems and the practicality of establishing grazing grounds surrounding irrigation settlements.

Whether interstate watersheds should be withdrawn from Federal control and administered as units, or by the State Governments through compacts.

To facilitate its work the commission established three sub-committees: (1) to study the disposal and service of public lands (2) to consider disposal and use of sub-surface fuel and minerals (3) to study future developments in the Federal Reclamation policy.

The article indicated that the next meeting of the commission probably would not be held until after January 1.

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Forest Protection
(From the President's Budget Message)

For the protection of our forests I am asking for a substantial increase in appropriations, amounting to more than $2,000,000. We have been spending in past years large amounts on the suppression of fires. In the last five years these expenditures have amounted to more than $8,000,000, and the best estimate is that $3,500,000 will be required this current fiscal year. We can not hope to eliminate entirely the necessity for spending money in the suppression of fires, but our efforts should be to minimize this necessity by more and more adequate protection measures. This is essential, not merely to effect a saving in the cost of suppressing fires, but to prevent the incalculable loss which results from the destruction of our forests. Such loss involves not only the timber itself, but the protection which it affords against soil erosion and floods. As the custodian of the National Forests, National Parks, and other public lands, the Federal Government is responsible for their protection. The obligations of this stewardship can not be met within the limits of the present appropriation and it is for this reason that I am asking for an increase to commence a program of more adequate protection of our forests. The protection of our present holdings certainly outweigh in importance the acquisition of further lands which would add to the areas requiring protection. For this reason I am not submitting in this Budget an estimate for the full $3,000,000 authorized for 1931 for the acquisition of lands for the protection of watersheds. The amount requested for such acquisition is $2,000,000. – Washington Star, December 4.

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Departmental Reorganization

(From the President's Annual Message to Congress)

This subject has been under consideration for over 20 years. It was promised by both political parties in the recent campaign. It has been repeatedly examined by committees and commissions--congressional, executive, and voluntary. The conclusions of these investigations have been unanimous that reorganization is a necessity of sound administration; of economy; of more effective governmental policies and of relief to the citizen from unnecessary harassment in his relations with a multitude of scattered governmental agencies. But the presentation of any specific plan at once enlivens opposition from every official whose authority may be curtailed or who fears his position is imperiled by such a result; of bureaus and departments which wish to maintain their authority and activities; of citizens and their organizations who are selfishly interested, or who are inspired by fear that their favorite bureau may, in a new setting, be less subject to their influence or more subject to some other influence.

It seems to me that the essential principles of reorganization are two in number. First, all administrative activities of the same major purpose should be placed in groups under single-headed responsibility; second, all executive and administrative functions should be separated from boards and commissions and placed under individual responsibility, while quasilegislative and quasijudicial and broadly advisory functions should be removed from individual authority and assigned to boards and commissions. Indeed, these are the fundamental principles upon which our Government was founded and they are the principles which have been adhered to in the whole development of our business structure, and they are the distillation of the common sense of generations. – Washington Star, December 3.

SUPERVISOR HAMEL SAYS

"Just recently we sold to the Northwest Paper Company timber on a 63,000-acre tract which will bring in about $500,000 in stumpage returns. This is but a small part of the story. Payrolls of about $8,500,000 to men employed in the woods, on railroads and in factories, about $125,000 to be paid to St. Louis, Cook, and Lake Counties in lieu of taxes, a minimum of $50,000 to be spent for roads and trails and a perpetual supply of logs and pulpwood sufficient to supply paper mills, sawmills, and other wood-working industries forever –– these are some of the immediate direct results of this sale.

"Another result will be the doubling of the capacity of several of the Cloquet industries. Improvements at the Northwest Paper Company's mill will cost in excess of $1,500,000; the Balsam Wool Factory is also being enlarged. Other Cloquet industries are expected to follow with increased capacities.

"It is not unreasonable to expect, if we control the greater part of the lands within the Forest, that eventually the Superior will yield an annual revenue of $1,000,000 from the timber resource alone.

"We can have our cake and eat it too. This development will have little or no effect upon the wilderness area, and our social values will grow in importance and yield revenue in health and money to the local citizens as well as visitors.

"The Forest is what makes this planwise development possible, and the forester is guiding it. We shall see what we shall see. The brush heap, as some have called it, will come to its own."

STILL REMEMBERS HIS FIRST LOVE

By C. E. Randall, Washington

We all know that interest in forestry seldom terminates with the severance of connection with the Forest Service. Many and notable have been the examples of continued contribution to the cause of conservation and forest development by former members of the Service. Here is another one which may have PR value because the contributor speaks from a position of some weight in the business world.

For fifteen years William R. Fraser, General Manager of the Harold Lloyd Corporation, was a member of the U. S. Forest Service. In an interview recently given to the press Fraser intimated that this work is still close to his heart, perhaps his first interest in life. Excerpts from his statement follow:

"No more important question is before the American people today than that of reforestation. Look at the figures! There is now left in this country some 130,000,000 acres of commercial timber, of which the Government owns about 29 per cent. The other 80 per cent is in private hands. Disastrous forest fires are consuming 4,000,000 acres a year and commercial cutting accounts for another 4,000,000 - together 8,000,000 acres."

"The whole problem of rainfall, moisture, water tables and irrigation is tied up in a proper forest system. You see, a forest area will retain 94 per cent of the rainfall, as against 12 per cent in a deforested area. The far-reaching importance of that statement is tremendous."

"It takes 40 years to grow a yellow pine tree eight inches in diameter, yet we think nothing of ruthlessly cutting such a tree down to meet a temporary situation."

Mr. Fraser advocates a large planting program as a means of unemployment relief. "Relieve the unemployment problem," he says, "by putting thousands of men to work in this virtually important and constructive field." While sudden expansion of planting to relieve unemployment would be difficult because growing of nursery stock must be started two or three years in advance, his plan has interesting possibilities.

The reporter who interviewed Mr. Fraser apparently was so impressed that he departed from the customary "no-editorial-comment" rule of newspaperdom by winding up his story with the exclamation: "An excellent suggestion at this particular time."

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How the Mississippi once looked is described in the accounts of some early travelers. [illegible] Hutchens in 1784 said: "The excessive muddiness of its waters after its junc[illegible]h the Missouri are very singular. ....From St. Anthony's Falls, it glides with [illegible] stream, and becomes comparatively narrow before its junction with the [illegible] waters of which immediately discolor the lower part of the river to the

Thomas Ashe who traveled extensively in the Ohio River drainage in the [illegible] The junction of the two rivers is very beautiful. The waters of the [illegible] and those of the Mississippi a transparent green. Above the mouth of [illegible]ssissippi is as clear and as gentle as the Ohio. The Missouri is re[illegible] and rapid. It is never clear." - E. N. M.

YE EDITOR DISCOVERS

The committee on forestry in the National Research Council has begun, in cooperation with the Forest Service, the preparation of a bibliography of North American forestry literature. It is planned to issue this bibliography in somewhat the same manner as the earlier bibliography put out by the Department of Agriculture Library many years ago. All literature published in Canada, the United States, and Mexico will be indexed, through the current year, in appropriate subject headings It is estimated that it will take almost a year to get the manuscript ready for the printer. At the present time two people are being employed on this work and it is possible that others will be engaged before the job is completed.

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Commercial forestry was much to the fore in West Virginia last week when representatives of the State, the Federal Government, the lumbermen, coal men, and a number of other interests met at Charleston for the first West Virginia commercial forestry conference. The meeting was sponsored by the United States Chamber of Commerce and followed generally the lines of the Wisconsin conference and the National Commercial Forestry meeting held last year. During the two day meeting addresses were made by Major Stuart, W. N. Sparhawk, A. B. Hastings, and H. N. Wheeler of the Washington office of the Forest Service and C. P. Winslow of the Forest Products Laboratory. John Raine, West Virginia lumberman and legislator and an active worker in the promotion of forestry in his State, acted as Chairman of the conference. The agenda of the meeting included discussions of the problems of forest protection, private timber growing, better wood utilization land use, and numerous other problems relating to the practice of commercial forestry.

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The growth and yield study for the upland hardwoods, being carried on by the Central States Forest Experiment Station in cooperation with the other eastern stations, is being pushed as rapidly as conditions will permit L. I Barrett from the station is in Washington going over the work which has already been completed during the past summer and making plans for the further compilation of the data during the coming winter. This study is the most ambitious one of its kind yet undertaken by the Forest Service, as some 30 or more species are involved For these it will be necessary to prepare the many needed volume tables before the yield data can be worked up Already there has been much demand for the few volume tables that have been completed.

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Attention is called to the fact that in the Volume, Yield, and Stand Tables for Second-Growth Southern Pines the yield tables for stands by the Decimal C log rule do not show that the data are expressed in tens of board feet. As these Decimal C tables have been prepared only because of the National Forest use of the Decimal C log rule, the omission of the notation is not serious. Forest officers should make a note on their copies so that this omission will not be overlooked.

According to Mr. Headley's article, and other signs, and portents the Forester's plan of visualizing information for Budget Bureaus, Congressional Committees, et al is proving quite effective.

LABORATORY AND DISTRICT 2 WORK TOGETHER ON DIFFICULT FOREST MANAGEMENT PROBLEM

By G. M. Hunt, Forest Products Laboratory

One of the very important problems in the management of the forests in Colorado, Wyoming, and Utah is the satisfactory disposal of the large quantities of Engelmann spruce that grow in these regions. The principal outlet for the spruce in the past in Districts 2 and 4 has been for railway ties. The railroads encountered great difficulty, however, in injecting preservatives into this species and were willing to accept only a limited quantity and that under some protest. The Union Pacific Railroad, for example, for some years past has been accepting up to 10 per cent of Engelmann spruce along with lodgepole pine ties. Unfortunately, some of the contractors producing ties for this railroad did not stop at 10 per cent and in one case at least shipped as much as 30 per cent of spruce. This was so objectionable to the railroad company that they have been seriously considering the policy of accepting no Engelmann spruce whatever. If that policy should be adopted, it would greatly complicate the forest management problems in the forests producing appreciable quantities of Engelmann spruce of tie size. Obviously it would not be good practice to allow contractors to high-grade the forests, taking out only lodgepole pine and leaving the Engelmann spruce, for, under such a system, the next crop produced would contain a much higher percentage of spruce than the crop now being harvested. On the other hand, the Service could hardly force the contractor to cut spruce ties and take them out of the woods if he had no market for them and no way to dispose of them. The possibility of a deadlock that would greatly hinder and possibly prevent tie sales from forests containing much spruce was becoming a matter of some concern.

Since the objection of the Union Pacific Railroad to Engelmann spruce was almost entirely based on its resistance to preservative treatment the Forest Products Laboratory was asked by the District Office to see what could be done to secure acceptable treatment in this species. A carload of Engelmann spruce ties was secured from Colorado through the courtesy of a commercial treating company interested in the treatment of these ties and an extended series of experiments was made at Madison in the laboratory's experimental treating cylinder. The results of these experiments were quite promising and indicated that by altering the treating conditions in common use the penetration of either zinc chloride or creosote could be so greatly improved in Engelmann spruce that resistance to treatment would no longer be a valid objection to its use for railroad ties.

Permission was then secured from the National Lumber and Creosoting Company to make some demonstration treatments in its creosoting plant at Salida and in September, Dr. J. D. MacLean of the Laboratory went to Salida to carry on the work. He was successful in demonstrating that his laboratory results could also be obtained in commercial apparatus and in showing that the Engelmann spruce ties on hand at Salida could be given a creosote penetration of 1/2 inch, more or less, in the heartwood and considerably deeper in the sapwood. This was so much better than had been previously obtained that it is considered very satisfactory. The ties at Salida were not incised (perforated). They were the property of the D. R. G. and W. Railway and the demonstration treatments were observed by the chief treating inspector of that company.

The consent of the Union Pacific Railroad to a treating demonstration was then secured and Dr. MacLean went to their treating plant at Pocatello, Idaho, where, in the presence of engineers detailed to the job by the Union Pacific and the Oregon Short Line railroads, he used the treating conditions so successful at the Laboratory and at Salida. The results again were quite satisfactory. The engineers were all convinced of the satisfactory treatability of Engelmann spruce when the treating conditions are properly controlled and sent reports to that effect to headquarters in Omaha. The ties at Pocatello were incised by running them through a machine which punches holes or slots in their surfaces, thus permitting better access of the preservative. The penetrations secured at Pocatello, therefore, were even better than those secured at Salida where no incising machine was available.

It is felt that the Laboratory, in devising a method of treatment for Engelmann spruce and demonstrating its effectiveness at the treating plants where the work will necessarily be done, has directly and materially helped to solve one of the most perplexing utilization problems in the Engelmann spruce regions. It is not expected that the railroads will about face and immediately accept Engelmann spruce with open arms but it is believed that their growing objection to the species has been stopped, that drastic action on their part need no longer be anticipated and that in the course of time such objection as remains to the species will gradually disappear so that it will ultimately be accepted freely and without restriction.

This case is an excellent example of how a silvicultural management problem may sometimes hinge on highly technical laboratory work of a character that field foresters generally cannot be expected to be familiar with.

WHAT PR WILL DO FOR YOU

By P. A. Thompson, Colville

The Chesaw Ranger Station on the Colville has been for many years the lightest fire district on the forest. On August 2, however, lightning set about 25 fires on the district. District Ranger Wiltz was, at the time, on the Chelan with the flying squadron. Consequently an unusual amount of responsibility fell upon the Key men of the community.

Ranger Buckley and myself also went over to the district to help organize, equip and dispatch men to this unusual number of fires.

Chesaw is a small place, but there is within a radius of 20 miles, a fairly prosperous farming community. Ordinarily one would find it hard to raise a 20 man crew to fight fire. The community, however, was aware that this was no ordinary time and the way it responded was certainly great. Men came from every direction; every 'phone line in the country was kept hot by willing cooperators and if any able bodied man was left in the community by the next morning it was because nobody knew him.

Early grain harvest had just begun and numbers of farmers left their binders standing in the fields of ripe grain from two to six days while they fought fire - willingly. Many of these men suffered considerable loss. I asked one prosperous farmer, who had been of great help to us, why it was that the community seemed so unusually willing to cooperate His reply was a tribute to Bob Foote (who used to be a Ranger of that district) of which Bob may well be proud.

"Well, ever since Bob Foote was Ranger here we sort of figure it's our own forest. We use the timber and run our stock out there and figure any damage to the forest is a damage to the community." Only a few words, but if one may judge from the way the community turned out to fight fires in "their" forest in an emergency, those people in the Chesaw district mean exactly what they say.

More and better men, roads, equipment, improvements - all of them are necessary - but our chances for getting on top of our peak load emergencies will be much better when we have such cooperation from our adjacent communities.

In fact the history of the Dollar Mt. fire shows that, had the settlers who worked on that fire while it was small been as fire conscious as the Chesaw district men, it would never have gotten beyond Class B size.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people. * * * Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson, Secretary of Agriculture.
> February 1, 1905

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

Service Bulletin

Contents Confidential

VOL. XIII No. 52 WASHINGTON, D. C. DECEMBER 30, 1929.

RESULTS OF THE 1928 WESTERN YELLOW PINE SEED CROP

By W. J. Sproat, Crater

Examinations during the past field season of the Crater National Forest western yellow pine cut-over lands have disclosed some interesting data in relation to the germination and survival of seedlings that resulted from the heavy seed crop of the fall of 1928.

A hundred acres or more of the 1928 tractor-logged, Owen-Oregon Sale area, which is on the west side of the Cascade Mountains, were covered with many hundreds of new western pine seedlings to each acre, when an examination was made in September 1929. They were all apparently in thrifty condition and all on mineral soil. The reserve stand on this particular site amounts to less than one thousand board feet per acre and the cut averaged approximately 20 thousand b. f. per acre. The timber on this exceptional area had been logged at a time seed were falling and when the soil was moist. Rains occurred just prior and during some of the time logging had been in progress. Incidentally, the stirring and packing of the soil by the tractor has had the same favorable effect that might occur after over-grazing by sheep and it has been brought to our attention through publications that germination of western yellow pine is possible on over-grazed cut-over areas.

Further systematic examinations have been made on those portions of the 1928 cut-over area of this sale, where the logging had occurred prior to the fall rains, with the result that few new seedlings were found. The 1927 and previous year cutting areas showed practically no new seedling growth.

Examinations were extended in October 1929 to other cut-over western yellow pine lands on the east side of the Cascade Mountains.

The Bear Creek, Anna Creek, Varney Creek and Four-mile Creek units have been carefully and systematically surveyed for data relative to the occurrence of subsequent western yellow pine which would be the result of the heavy 1928 seed crop.

On a 1909 cut-over area, where tractor logging had not taken place, and where an exceptionally large percentage of the original western yellow pine stand had been left in reserve, a fairly even but scattered distribution of very sturdy and thrifty seedlings are growing, which is the result of the 1928 natural seeding. No seedlings were found here that were on mineral soil but were all growing in squaw carpet (Beanothus prostratus).

Examination on the 1929 and previous years cut-over lands of the Pelican Bay Lumber Company and the 1928 and previous year cutting on Anna Creek sale areas as well as recent cut-over areas on Varney Creek and Pelican Butte showed practically no living seedlings, but a fairly large number of dead seedlings were found on the 1928 logged-off portions. All of these had started on mineral soil.

The apparent absence of any germination on the 1927 and previous year cut-over areas, except that area mentioned above that had been lightly cut over in 1909, is noteworthy.

WHAT ABOUT FIRES?

By H. N. Wheeler, Washington.

May not a radical change in our fire protection methods be in order?

For nearly twenty-five years stress has been laid on fire fighting; quick discovery; a quick getaway, with rapid marshalling of forces equipped with tools and supplies from strategically placed caches and stores. Everything has been standardized to the last degree, and yet, each year fires of human origin are doing millions of dollars' damage.

Doctors heal our diseases, and lawyers get us out of legal difficulties, but much time, effort, and education are put forth in prevention of diseases and in teaching respect for law and how to avoid legal entanglements. Is not the forest-fire problem comparable to this? And if more of the money spent in fire fighting during these past years could have been used in education and in protective improvements to prevent fire from starting, is it not possible that the American people would now be more nearly "Forest Minded" and the fire problem, as we know it to-day, would be nearer solution?

The present method of spending such large sums of money and energy at the fire game, with a comparatively small amount for education, does not seem to be getting rid of the fire menace. A. C. Coonradt, Assistant Professor of Mechanical Engineering at New York University, after an extensive study, concludes that,-"no substantial gain whatever" in reducing American forest fires has been made in the last 12 years. Our methods of twenty-five years have reduced the acreage burned but have not gone far in preventing fires.

Harris Reynolds, Secretary, Massachusetts Forest Association, has proven on Cape Cod that intensive education helps prevent fire. Kit is less expensive than simply fighting the fires after they start.

There are many people yet who really believe forest fires are beneficial, if not to the public in general, at least to them individually. There are even some foresters who believe fire is a good means of stimulating reproduction, and others who believe it helps in slash disposal, and there are State laws that require the firing of railroad rights-of-way. My own observation in traveling extensively in every State in the Union, together with the testimony of many careful observers, forces me to conclude that fires always do more harm than good (if they ever do good). Even the intentional railroad rights-of-way fires, and the intentional broadcast burning on the west side of the Cascades in Washington and Oregon, supported by some foresters, is condemned by other foresters. Education, by experiment, demonstration, chemical analysis, tree planting, and through every avenue of approach,- picture, exhibit, and the printed and spoken word - must be put into effect if these erroneous ideas are to be changed and the whole country is to present a united front against the fire demon. If foresters condone and support firing the woods here and there for some supposed beneficial purpose, it weakens the whole position.

MORE ABOUT FIRES

By J. C. Whitham, Beaverhead

The more I see of such fire seasons as that of 1929, in Northern Idaho, following so closely those of 1925 and 1926, the more I am convinced that the solution of the fire problem is not alone one of more men and better organization but that it is almost equally a question of the reduction of the extreme fire hazards.

So long as we continue to maintain these areas of extreme hazards such as are found on the worst of the old burns and slash areas in the white pine type, just so long will we continue to have such losses as occurred in 1929, almost irrespective of the increases obtained in the regular protective forces; although I grant that numbers will have some effect in delaying the final results. The white pine type can successfully be protected from fire with the right organization if these extreme areas of hazard are properly reduced but I, for one, do not believe that they ever will be so protected until we take the "bull by the horns" and get rid of such areas, and this means to make a controlled burn of them.

The idea of deliberately setting out even controlled fires on the Forest has seemed so far to be too revolutionary for most Forest officers to "swallow", but when we are dealing with a revolutionary foe such as fire, drastic measures are sometimes the best solution. We surely have had enough evidences of our inability to adequately protect the white pine type. From my four years' experience on the Kaniksu (one of the most explosive of all the white pine forests) I am more than convinced that at least half of our trouble has been our failure to recognize these extremely hazardous areas with sufficient conviction to lead us to take the required action. The result is that we not only lose these areas, by fire starting in or near them at the wrong time, but also we invariably lose infinitely more valuable stands lying adjacent to them.

While Supervisor of the Kaniksu, I designated what I considered the twelve (12) more hazardous areas on the Forest (such as the 200-acre patch of old slashings lying just east of the Falls R. S.), and requested authority of the District Forester to put a fire line around them with an organized crew and touch them off during the latter part of the fire season when burning conditions were best. The tracts in question involved in the neighborhood of a total of seven sections. The authority was not forthcoming, even though I offered to take personal responsibility for the results. Instead I was given authority to put a fire line around and through several of the most accessible tracts, on contributed time, and to have outlined a definite plan of attack in case fires occurred. This, of course, ed, this, of course, was some progress, but it did not go far enough to satisfactorily meet the situation that confronted us.

There would undoubtedly be criticism, both in and out of the Service, on deliberately burning over areas that it can be argued might by exceptionally good fortune eventually come through without being distroyed by fire; but all of our past experiences are against such a probability, especially in the more accessible portions of the most heavily used Forests. Then of course there is the possibility that the fire might get away from us, but with the fire trails constructed and fire conditions studied in advance and made known to the organized control crew located at the most strategic points, our chances of holding the line are infinitely better than in tha case of the average fire where men rush in at the 11th hour to establish control. Additional authority might also be required to use the fire fund in such a manner, but we have been successful in securing more revolutionary changes than this in our financial control system, when occasion seemed to demand it, and this should be no serious stumbling block.

I, for one, believe that we will adopt such a system within the next ten years, and the sooner we get at it the sooner we will be growing white pine timber,-either from artificial planting or from natural regeneration,-that we can successfully protect.

A NEW NATIONAL FOREST JOINS THE FAMILY

A Government voucher payable to the Columbia Farms Company, initialed by the Forester and Associate Forester, and signed by the Secretary of Agriculture, which went through December 6, marked the actual birth of the Osceola National Forest in Northern Florida. It was for $391,818.95 and represented payment for 78,363.79 acres of land at $5 per acre. With the exception of the payment for the Waterville tract, it is probably the largest single disbursement ever made under the Weeks Law. However, a part of the timber on the area, valued at about $195,000, is already under timber sale contract, and Uncle Sam may be able to liquidate the major part of his investment within a few years. - L. F. K.

THE CHRISTMAS COVER

By E. N. Munns, Washington

The Service Bulletin did itself proud on its Christmas number, and its interesting contents were made even more interesting by its cover. To those who developed this issue all credit must be given.

Mrs. Shaw did a splendid job on the cover, but if one can be permitted to comment on the work of so able an artist and those who were responsible for it, I would call to attention the fact that perhaps the more important humanistic side of the forest relationships have been put too far in the background, and that the emphasis has been placed too much upon material things. 'Tis true too much among foresters!

For example, "streamflow regulation" can scarcely be read and it, together with "erosion control," are in the background . "Paper," "lumber," and "railroad ties" stand out prominently. Yet, the backbone of our efforts to put forestry on the map has been and should be still the so-called indirect benefits of the forest. We perhaps could substitute iron, cement, clay mineral oils, or other vegetable products for those obtained from the forest, but we cannot as a nation exist economically if floods destroy our lands, if it costs us too much to obtain water for irrigation or power, or if our soil clogs the wheels of national and international commerce.

Let us therefore not put these forest relationships in the background in our thoughts or in a small recess of our minds. Let us put them out where they come before us and others constantly and prominently. The physical products of the forest are obvious to the most casual observer but intangible values are all too often recognized only when the producing cause has been lost.

THE EFFECT OF SOIL ON TREE FORM

By Harold F. Morey, Allegheny For. Exp. Sta.

Although soil is known to be an important site factor, little has been written of the relationship of soils to tree-form. Hilgard, who makes several interesting statements about the effect of soil on the general form of the tree in his book on "Soils", observes that the same soil produces different, and sometimes opposite, effects on the forms of two different species.

According to Hilgard: "-------the willow oak (Q. phellos), which on low, undrained ground assumes the low, rounded, 'apple-tree' form, while on well-drained uplands of good fertility it is a beautiful, slender tree producing almost the same effect as the acacia type; it is then a sign of first-class land. The scarlet oak rather reverses these types; on good, 'brown-loam' upland it is of rounded form, not very tall, with sturdy, rough-barked trunk; while on poor hillside lands its tall, smooth, white trunk stands out as a conspicuous admonition to the land seeker to beware of a poor purchase. The black and Spanish oaks also indicate, by tall, thin trunks, a deterioration of the land as compared with the lower and more sturdy growth on area relatively richer in lime."

"One feature invariably repeated, not only in Mississippi but throughout the United States, is that in many strongly calcareous soils the growth of all trees, as well as of shrubs and of many herbaceous plants, is of a more thick-set habit than that of the same species grown on thin sandy or generally on non-calcareous land. This effect is quite apparent in the arid region of the Pacific Coast as in the Atlantic States, on the prairies of the Middle West, and of the Gulf Coast. The experienced farmer recognizes this habit of the tree-growth as a sign of good land, and the reverse viz., trees of lank, tall and thin growth, as evidence to the contrary, from the Atlantic to the Pacific."

"PRO AND CON"

Get This

If your boss asks you to do something with which you do not agree in the matter of method or policy, do it three times as energetically as ordinarily. If you are right, the error will be evident three times as quickly as otherwise. If you are wrong, you have learned your error at no cost to yourself. - Six Twenty Six

The King Can Do No Wrong

The "Get This" article, supposedly originating in the Six-Twenty-Six, and quoted in the Daily News of November 19, sounds like a far away echo from the Dark Ages.

The advice is correct if you have a Know-it-all boss, and in which case it is just too bad for both of you.

Does the modern executive surround himself with "yes" men who are content merely to follow his orders and wait for him to discover all his own errors. Not by a jug-full.

Why are hundreds of the leading commercial firms of this country asking and encouraging their employees for constructive criticism and suggestions? Some even go to the extent of offering a cash premium for each accepted suggestion.

The soldier who was marched off the dock by his officer was both an obedient soldier and a boob, and he didn't get a bit more wet by doing it three times as energetically.

In Forest Service work, does loyalty and obedience to the boss (whoever he may be) take precedence to loyalty to the ideals and future welfare of the Forest Service? Not so you could notice it.

If you have a true boss who is worthy of the name, he will welcome your suggestions and constructive criticism, but if he is not and does not -- keep right on, he won't be a boss very long. If you should be wrong, the real boss will take the opportunity to show you where you are wrong and will at least know you are interested; and if you are correct you will have the satisfaction of knowing you have been so and the boss will know you have been thinking about your job and are not just another name on the pay roll.

The quotation itself sounds familiar and was probably written before the principles of democracy and progress were brought forth to enlighten the world. - Anonymous, D. 4. Bulletin.

YE EDITOR DISCOVERS

In order to correlate and unify policies and practice in personnel management, and in order to provide for more aggressive and organized counsel to the Forester in personnel matters, the Forester has created a personnel committee consisting of the Associate Forester and Chiefs of Branch. The committee will have authority and responsibility to advise in personnel matters, either on its own initiative or at the suggestion of the Chief of Operation or the Forester. The first work of the committee was on the suggestions submitted by the Forest School men on the tentative draft of the questions and answers on recruiting policy of the Service. During the winter the committee expects to tackle the far-reaching questions involved in the policies guiding the Ranger, Junior Forester, and Junior Range Examiner Civil Service examinations.

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The Agricultural Appropriation Act as reported by the Committee contains the following addition to the section on automobile mileage rates:

"Provided, that the Secretary of Agriculture may authorize not to exceed 10¢ per mile for an automobile used in localities where poor road conditions or high cost of motor supplies prevail and he finds that the average cost to the operator is in excess of 7¢ per mile: Provided further, that the Secretary of Agriculture may authorize the payment of toll and ferry charges, storage, and towage of such motorcycles and automobiles in addition to mileage allowance."

Forest officers who believe they should receive more than 7¢ per mile auto mileage would do well to start keeping books on their automobiles, in order that they may prove just what their average costs are.

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Plans are under at the Lake States Exper ment Station for beginning a comprehensive study of the factors involved in germination of pine seed. Two rooms in the station headquarters are being made over into refrigerators, each room to have a different low temperature. The plan is to subject the germinating seed to alternating conditions of cold and warmth during the day as a means of stimulating germination and to determine the relative value of Norway pine seed from a number of different sources. It is also planned to utilize the low temperature chambers to determine the value of low temperature in the storage of seed. The work is under the general direction of Charles G. Bates.

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Members of the geological party of the Byrd dxpedition each receive a balanced ration of 36 ounces a day when on the trail. It consists mainly of pemmican, peanut butter, biscuits, sugar, and tea. It is not stated whether the weight of the container is included in this figure. The emergency ration, not the day in and day out ration, for the same period as prepared for the short-term force in one of the Districts weighs 73 ounces, including the weight of the containers.

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In recognition of his important work in hydrology Raphael Zon has been given an honorary diploma by the Mexican Forestry Society.

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At the Washington office family meeting, held in the New National Museum on December 11, Munns gave a very interesting and instructive lecture on European forestry conditions.

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The following letter was received by a Congressman from a backwoods constituent and referred to the Forester:

Dear Sir:

"I dreamed the other night I was in a huge bombing plane dropping bombs filled with chemicals into a forest fire. I cannot get it out of my mind until I know whether such a thing has ever been tried. I am just an old farmer and do not know anything about the technical difficulties. If such a plan would work I shure would like to drop the first bomb.

Yours truly,

The first one will have to be dropped on the chemists and other theorists before they can be tried on fires.

Ed Munns is presumably looking at the Christmas cover of the Bulletin with the eyes of an Einstein and would like to see emphasis given to the various factors pictured in the order of their relative importance. Art, of course, is a matter of light and shade and perspective rather than one of relativity. The road is apparently smaller at the back than in front and if Ed could only have got a little nearer in imagination to the various signs hanging on our Christmas trees, or could have entered our X-mas forest from the other side of the page, he would have discovered that the more important factors had larger labels than the less important ones, and I am sure would have been completely satisfied with the relative size of the "stream flow" label. We are charmed to see one of the loamiest of dirt foresters (or so we thought) pleading for recognition of forest values other than the annual increment. We, Ye Ed., are what you might call a "jack" forester, and that is probably why we have always,- ever since we chased the cows home through the big, dark, woods on Grandad's farm-thought of the forest as having a lot of important values besides its wood-production ability. These other values, too, are some of the best arguments in selling forestry, which is our present business. If there are any more foresters like Ed, we invite them to write for the Bulletin.

A LETTER ON WATER TANK TRUCKS

Dear Sir:

I have just returned from a week on the fire line on El Cajon Mt. In San Diego - Cleveland Forest. I couldn't say no, when the Pasadena office called up and asked me to go south to help my old friend, Lew Anderson.

If you want to know what a water tank wagon did and what could have been done, if they had of had 4 or 5 tank trucks, ask the District Ranger in that district, Mr. Bert Stephenson - He's sold. They had a combined fire break and motor way across the Mt. We had one small tank truck and stopped the fire at the lower end of the motor way with this truck.

Then the 15 m. p. h. wind reversed and blew the fire across the upper end on Thursday - then, we chased the fire until Sunday. Just one more little water tank truck would have saved a good many dollars right here.

Some day you are going to let those boys down there have a lot of water tank trucks. Why not get busy this winter and dig up two or three for them now?

The record Mr. Turner, the L. A. County Forester, and Mr. Mendenhall have set here in L. A. County this summer certainly proves that these water tank trucks will put out a fire.

Why not read my letter again - get a report on water tank trucks from Mr. Stephenson - then get busy and dig up water tank trucks now - instead of waiting for another 5 years - for you are going to use a lot of them sooner or later. You are paying for them now - why not have them?

MRS.. EDITH L. CHAPMAN

By J. I. Buckner, D. 2.

The passing on Sunday, November 10, after a brief illness, of Mrs. Edith L. Chapman, removed a valuable employee from the ranks of District Two, and brought sorrow to the hearts of her many friends.

Mrs. Chapman, then Miss White, entered the Forest Service on October 14, 1912 as Clerk-Stenographer on the Uncompahgre National Forest where she served until June 1, 1914. She was then transferred to the District Office where she served continuously except for two short periods. In 1918 when efficient and experienced help was needed at the Madison Laboratory on account of war activities she volunteered and was assigned to that office for five months. In 1920 she resigned in order to be near her aged mother in California, but the old ties were too strong and she was reinstated seven months later.

In all assignments Mrs. Chapman was loyal, cooperative, and efficient. Her loss to the Service is keenly felt.

YOU CAN TELL A CIVILIZED COUNTRY.

It's one where people kill the birds and then spend millions to fight the insects.-
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